



# Precast Concrete Trench Drain Systems



**HYDROTEC** <sup>®</sup>  
*Technologies*



Quality – Service – Commitment – Delivered.

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**HYDROTEC**   
*Technologies*

## Trench Drain Systems

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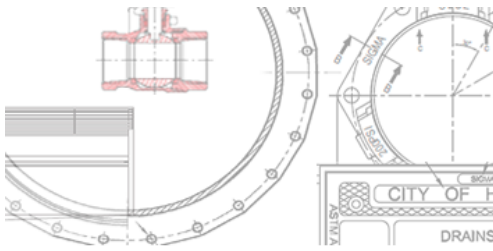
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## About SIGMA

### Quality - Service - Commitment - Delivered



SIGMA Corporation has been developing products for the North American Water and Wastewater industry for over 25 years.

Today, we are one of the world's largest suppliers of specialty water products within the American Waterworks Association (AWWA) range.

At SIGMA, we are proud to offer the highest quality ductile iron waterworks fittings, pipe restraint products, municipal casting products and trench drain systems available on the market. We operate a network of warehouse and distribution offices that provides us with a national reach.

### Our Partnership with HYDROTEC

SIGMA has grown rapidly through an increased focus on geographic expansion, and by broadening our extensive product line. We have recently complemented our portfolio by acquiring a number of new product lines to service the fire protection, plumbing, pump, valve and trench drain industries.

Our recent partnership with HYDROTEC, a leading manufacturer of Trench Drain Systems from Germany, broadens our business and plays to the strengths of the SIGMA team.

SIGMA is also an important OEM supplier to the water industry, working with our customers to develop value added and engineered solutions for the valve, hydrant, and pump sectors. We have leveraged OEM's synergies to expand our footprint outside water and castings in order to serve numerous customers across many different product categories. We deem all inquiries as worthy of review by our team and our vast and growing supply base.



### Our Mission and our Commitment to our Customers

Our mission is to exceed our customers' expectations by focusing on the principles of quality and customer service. Commitment to our customer is the foundation on which these principles are based. We aim to be your trusted business partner, giving you confidence in our well engineered products. We are industry leaders in the field of quality testing, and seek to raise the bar on quality standards and manufacturing processes in our industry. The company has pioneered a quality control procedure that is the highest in the industry, relying on process controls, testing, and a unique heat coded marquee, displaying manufacturing data that is encoded at the time of manufacture.

At SIGMA we believe that quality is not a cost; rather it is an investment on behalf of our customers – and their customers. Because of our quality approach to manufacturing and to customer service, it pays to do business with us.



## Certified Quality



Our products are tested for compliance with international standards and monitored by internationally accredited test laboratories.



## Quality Management



We guarantee a high standard of safety as HYDROTEC is DIN EN 9001:2000 certified. HYDROTEC also fulfills the requirements of other international standards such as: ON-CERT, EMI and KIWA.

Our complete Trench Drain product range is internally and externally monitored for quality and approved according to DIN EN 124 and EN 1433.

SIGMA believes that quality does not cost, it pays. Our team commitment to quality is to maximize the combined value of our service to each of our customers, by supplying all of our products to the highest requirements and standards of customer satisfaction. We strive to ensure that our products are delivered free of defects at a competitive price, with the utmost attention to all aspects of product development, production, and supply chain management

## What we are proud of!



HYDROTEC's competence is not only well-known in Germany. HYDROTEC is now one of the biggest players on the European drainage technology market.

However, HYDROTEC has already established a foothold outside of Europe. In the Middle and Far East in particular, dealers, planners and contractors working on communal and private projects all rely on our quality "Made in Germany". The cable duct at the Schalke Arena soccer stadium, the covers on Palm Tree Island, or the trench drains for the Formula 1 racetracks in Shanghai and Istanbul are just some of HYDROTEC Technologies AG's reference projects.

These are results that can't be achieved with unkept promises. Performance and innovation are what it takes to convince others more than anything else.

### General notes

Illustrations, dimensions and weights are provided without commitment. We reserve the right to modify the design and production methods to reflect the current state of art in technology. All previous catalogues become invalid on publication of this catalogue. All details concerning standards and kite marks were correct when this catalogue went to press.

## Load Standard DIN19580 / EN 1433

DIN19580 is the only standard written specifically for trench drains, and that is internationally recognized.

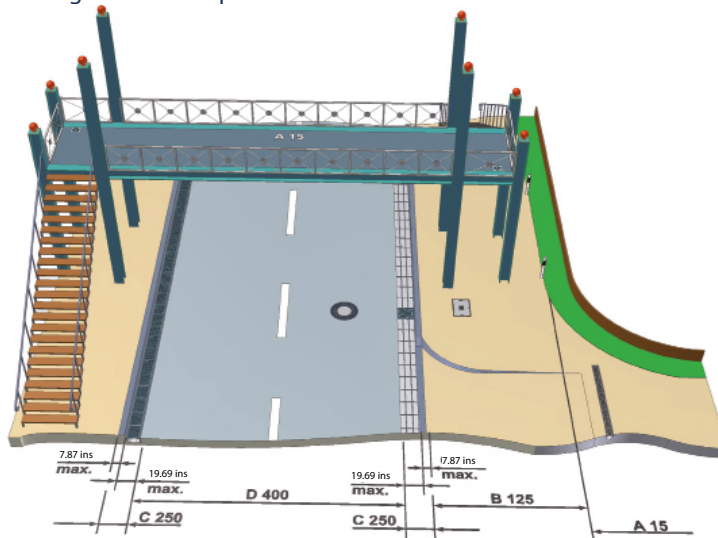
DIN 19580 accounts for different widths of grates:

- For trench drains less than 8" wide, the required test block for load testing is 10" long by 3" wide;
- For trench drains 8" and 12" wide, the test block is 10" by 6";
- For trench drains over 12", the test block is 10" diameter.

This ensures that no load is transferred to the grate supports and the full force of the test load is directed onto the grate itself.

DIN 19580 is being superseded by EN 1433. EN 1433 tests products in exactly the same method as DIN 19580 with the same load categories, up to 202,320lbs - 4,182psi.

As with DIN 19580, EN 1433 offers testing methods for both the complete trench drain and individual grates. It accounts for both proof loading and catastrophic failure.



## Load Classes: A, B, C, D, E and F.

Load Standard DIN19580 / EN1433 accounts for six different load classes, from lighter to heavier load: A, B, C, D, E and F.



**Class A**  
15 kN / 3,372 lbs.  
Residential areas used by pedestrians and cyclists.



**Class D**  
400 kN / 89,920 lbs.  
Roads and highways.



**Class B**  
125 kN / 28,100 lbs.  
Sidewalks, pedestrian areas and small parking lots.



**Class E**  
600 kN / 134,800 lbs.  
Industrial areas used by vehicles with a particularly wheel load, e.g. gas stations and loading dock facilities.



**Class C**  
250 kN / 56,200 lbs.  
Parking lots and general commercial areas.



**Class F**  
900 kN / 202,320 lbs.  
Special areas with heavy wheel loads, e.g. airports and docks.

## HYDROTEC Trench Drain Product Line by Load Class



**CLASS A**  
15 kN / 3,372 lbs

Residential areas used by pedestrians and cyclists.



**CLASS B**  
125 kN / 28,100 lbs

Sidewalks, pedestrian areas and small parking lots.



**CLASS C**  
250 kN / 56,200 lbs

Parking lots and general commercial areas.



**CLASS D**  
400 kN / 89,920 lbs

Roads and highways.



**CLASS E**  
600 kN / 134,800 lbs

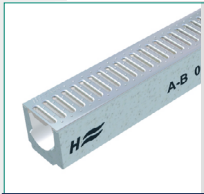
Industrial areas used by vehicles with a particularly heavy wheel load, e.g. gas stations and loading dock facilities.



**CLASS F**  
900 kN / 202,320 lbs

Special areas with heavy wheel loads, e.g. airports and docks.

### MINI



**MINI100 (4") A**  
Galvanized Steel Slot ADA Grate

**MINI100 (4") B**  
Galvanized Steel Mesh Grate

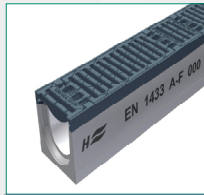
### TOP



#### TOP100 (4") LOAD CLASS A/C

Galvanized Steel Slot ADA Grate (Load Classes A & C)  
Galvanized Steel Mesh Grate (Load Class C)  
Ductile Iron Grate (Load Class C)

### MAXI



Ductile Iron ADA Grates

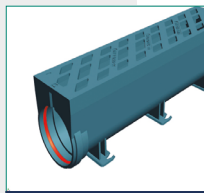
#### MAXI100 (4") LOAD CLASS C/D/E/F

#### MAXI150 (6") LOAD CLASS D/E/F

#### MAXI200 (8") LOAD CLASS D/E/F

#### MAXI 300 (12") LOAD CLASS E/F

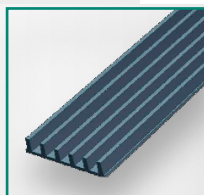
### HYDROblock



One piece Ductile Iron

#### HYDROblock 100 (4") / 200 (8") / 300 (12") LOAD CLASS F

### HYDROline



One piece Ductile Iron

#### HYDROline LOAD CLASS F

## HYDROTEC Trench Drains at a Glance

- All trench drain channels are made out of fiber reinforced concrete (strength class C35/45).
- Available in 4", 6", 8" and 12" wide.
- Available in 39.37" (1 meter) and 19.69" long (0.5 meter)
- Available flat (all sizes) and pre-sloped (4" and 6" only).
- Load Classes A, B, C, D, E and F as per Load Standard DIN19580 / EN 1433
- Liquid-tight to EN 1433 standard.



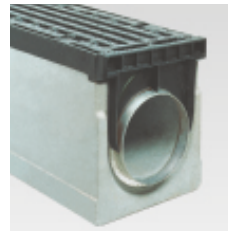
Easy opening and closing from standing position



No "overshoot" thanks to longitudinal grating slots



Clean closure for any drainage channel



Easy connection to ground pipes

## Advantages of Fiber Reinforced Concrete vs. Polymer Concrete

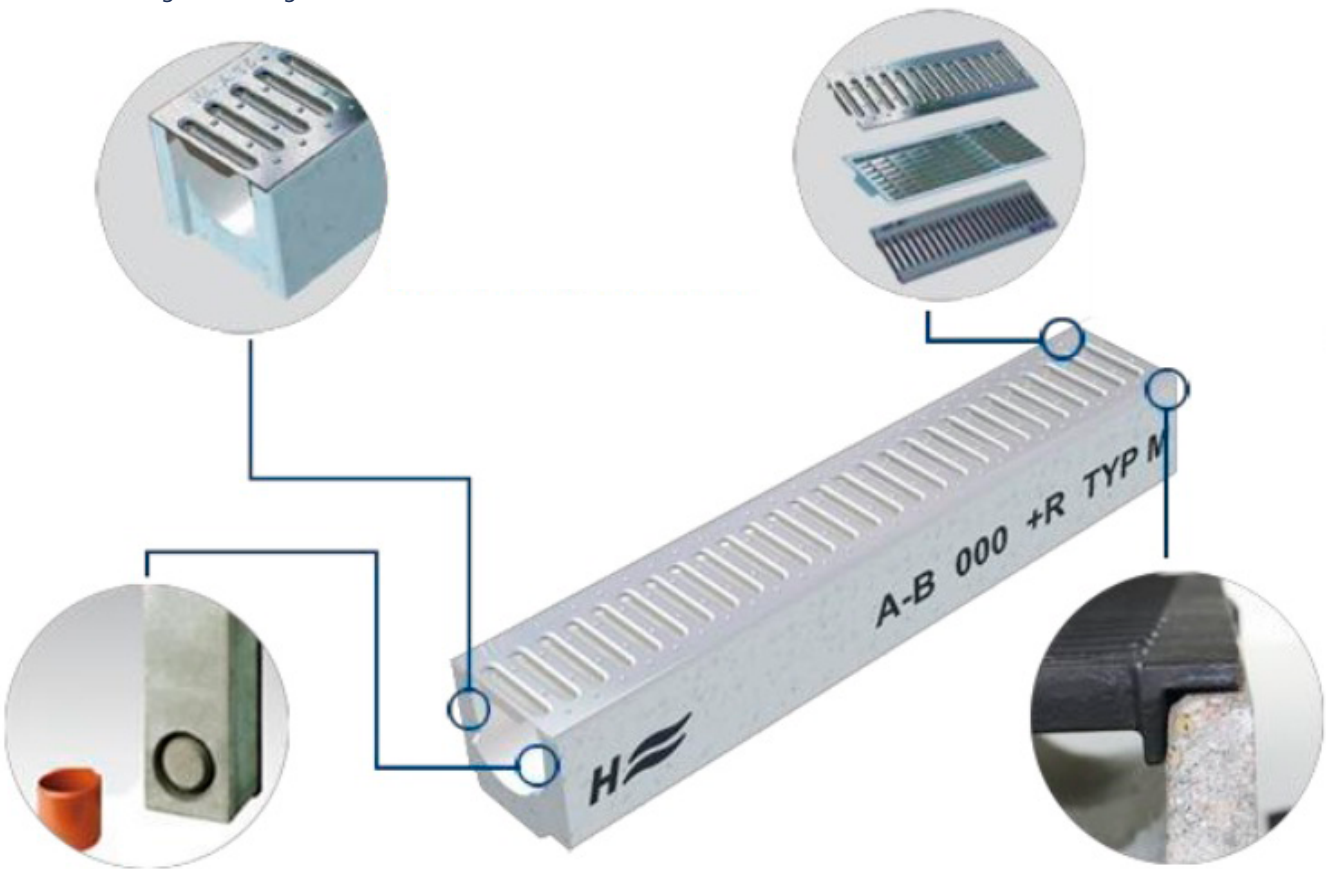
- + Less brittle than polymer concrete which drastically reduces breakage during transportation and installation.
- + Best of class foundation effect thanks to mass and U shape. The smooth outer surfaces guarantee best possible load transfer to the foundations.
- + The channels possess the same thermal expansion coefficients as the concrete encasement.
- + Low CO<sub>2</sub> emission and low energy requirement in manufacturing.
- + No need to hang or suspend the channels which, alongside HYDROTEC's patented locking mechanism, reduces time and installation costs.
- + Environmentally friendly, natural building product, fully recyclable.
- + Non-combustible.
- + Superior abrasion resilience compared with polymer concrete.

## MINI SYSTEM

### Product Description

The MINI trench drain line is a simple modular system for uncomplicated D.I.Y. installation. These 4" wide flat trench drains are available in 39.37" (1 meter) and 19.69" (0.5 meters) long and they are easily joined together by connecting male and female profiles. Each channel section has a precast vertical outlet for 4" pipes. Available with galvanized steel slot ADA and galvanized steel mesh grates that provide a neat transition from the trench drain to the adjoining road surface.

Apart from use in private and leisure areas, the MINI trench drain is also suitable for sports fields, pedestrian areas, courtyards and car parks. The grates are held firmly in the channels, avoiding jamming between the adjoining surfaces. The use of natural building materials guarantees environmental friendliness.



- Practical system for easy D.I.Y. installation
- Precast vertical outlet to connect 4" pipes in each section
- Edge rail incorporated in the grate
- Male and female channel profiles for easy fitting

### Areas of Application

- Sports Fields
- Shopping Malls
- Pedestrian Areas
- Domestic Driveways



MINI SYSTEM

Application Example: Aarhus Stadium, Denmark



Ar

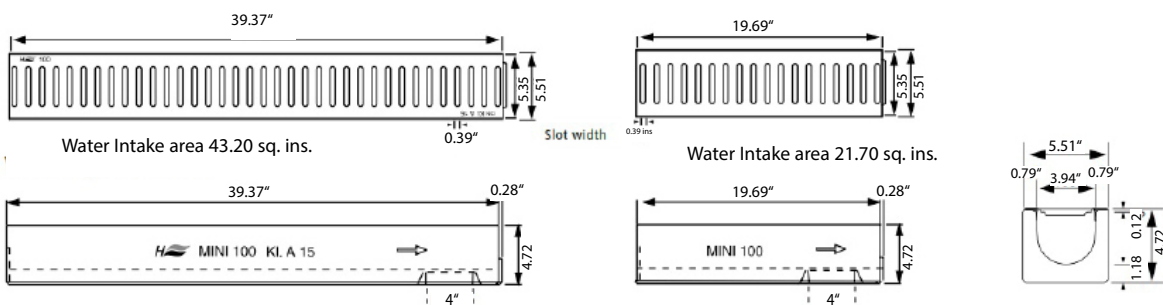
## MINI 100 SYSTEM (4")

### MINI Load Class A with Galvanized Steel Slot Grate



Product range

Part Description	Part No. CHG64110-	Weight lbs	Overall Length Inches (mm)	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Drainage channel without slope	-000	52.91	39.37" (1000)	4.72" (120)	4.72" (120)	48
	-005	34.17	19.69" (500)	4.72" (120)	4.72" (120)	96
Catch Basin	-008	63.93	19.69" (500)	14.29" (363)	14.29" (363)	10

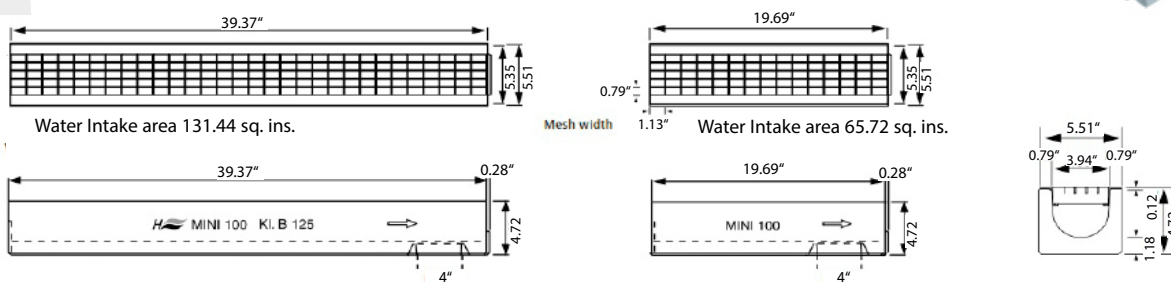


### MINI Load Class B with Galvanized Steel Mesh Grate

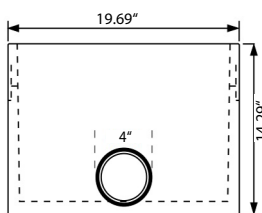


Product range

Part Description	Part No. CHG64120-	Weight lbs	Overall Length Inches (mm)	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Drainage channel without slope	-000	52.91	39.37" (1000)	4.72" (120)	4.72" (120)	48
	-005	34.17	19.69" (500)	4.72" (120)	4.72" (120)	96
Catch Basin	-008	63.93	19.69" (500)	14.29" (363)	14.29" (363)	10



### Accessories MINI Load Class A & B



Catch Basin includes galvanized dirt catcher  
CHG64110-008 (Class A)  
CHG64120-008 (Class B)



End Piece  
Galvanized Steel  
Part.No.: CHG70016-00



4" Pipe Connector  
Part.No.: CHG70021-00

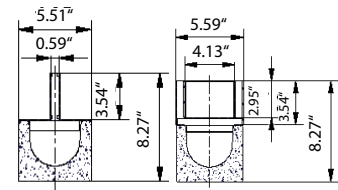
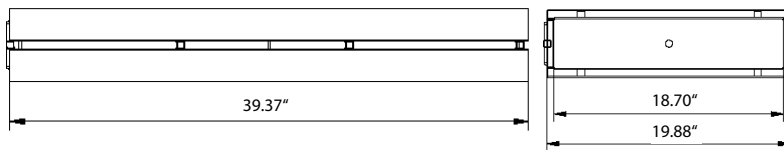
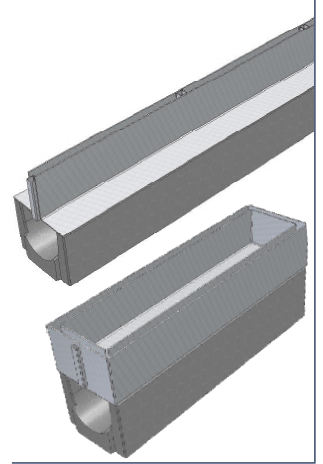


Foul air stop 4"  
Part.No.: CHG70031-00

### MINI SLOT 100

Product range

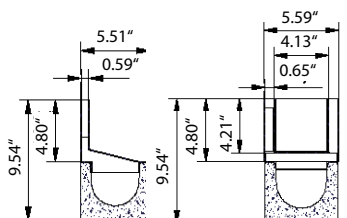
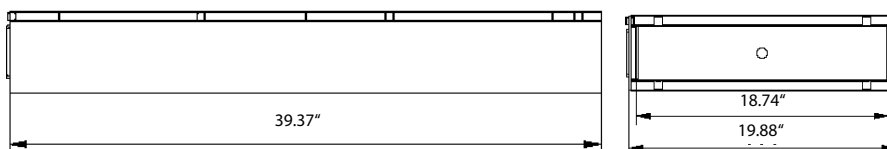
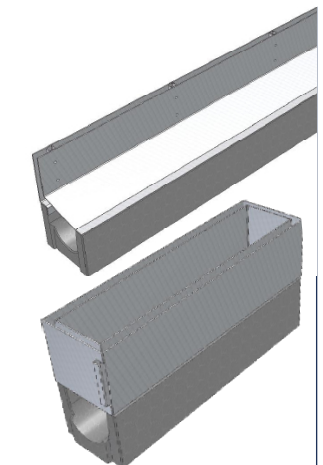
Part Description	Part No. CHG6413-	Weight lbs	Overall Length inches (mm)	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Drainage channel without slope	-1000	52.91	39.37" (1000)	8.27" (210)	8.27" (210)	48
	-1005	33.07	19.69" (500)	8.27" (210)	8.27" (210)	96
Galvanized Steel Catch Basin	-1008	63.93	19.69" (500)	8.27" (210)	8.27" (210)	-
Drainage channel without slope	-2000	52.91	39.37" (1000)	8.27" (210)	8.27" (210)	48
	-2005	33.07	19.69" (500)	8.27" (210)	8.27" (210)	96
Stainless steel Catch Basin	-2008	63.93	19.69" (500)	8.27" (210)	8.27" (210)	-



### MINI SLOT 100, sideways

Product range

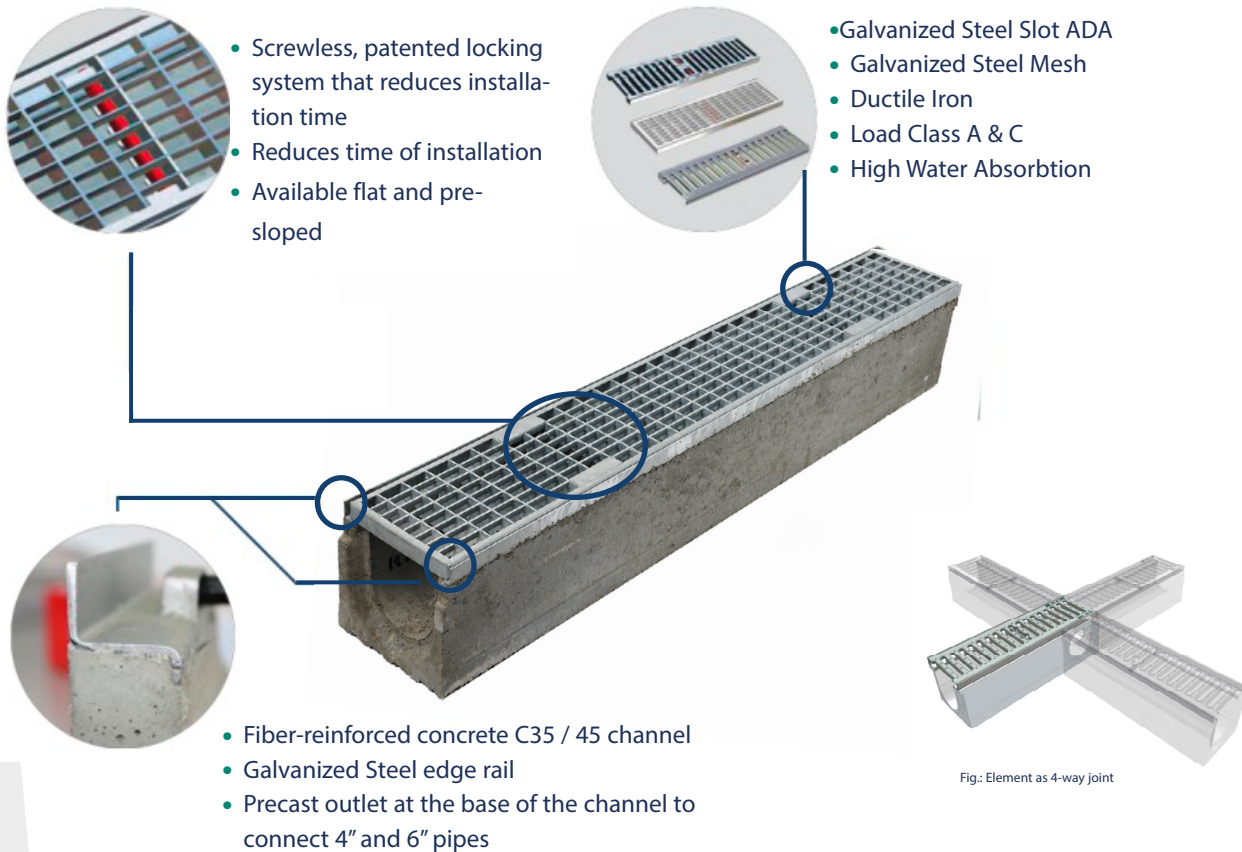
Part Description	Part No. CHG6413-	Weight lbs	Overall Length inches (mm)	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Drainage channel without slope	-3000	52.91	39.37" (1000)	9.45" (240)	9.45" (240)	48
	-3005	33.07	19.69" (500)	9.45" (240)	9.45" (240)	96
Galvanized Steel Catch Basin	-3008	63.93	19.69" (500)	9.45" (240)	9.45" (240)	-
Drainage channel without slope	-4000	52.91	39.37" (1000)	9.45" (240)	9.45" (240)	48
	-4005	33.07	19.69" (500)	9.45" (240)	9.45" (240)	96
Stainless steel Catch Basin	-4008	63.93	19.69" (500)	9.45" (240)	9.45" (240)	-





### Product Description

The TOP trench drain line is a modular system for pedestrian areas, parking lots, general commercial areas and sport fields. These 4" wide trench drains are available in 39.37" (1000mm) and 19.69" (500mm) long, flat or pre-sloped and they are easily joined together by connecting male and female profiles.



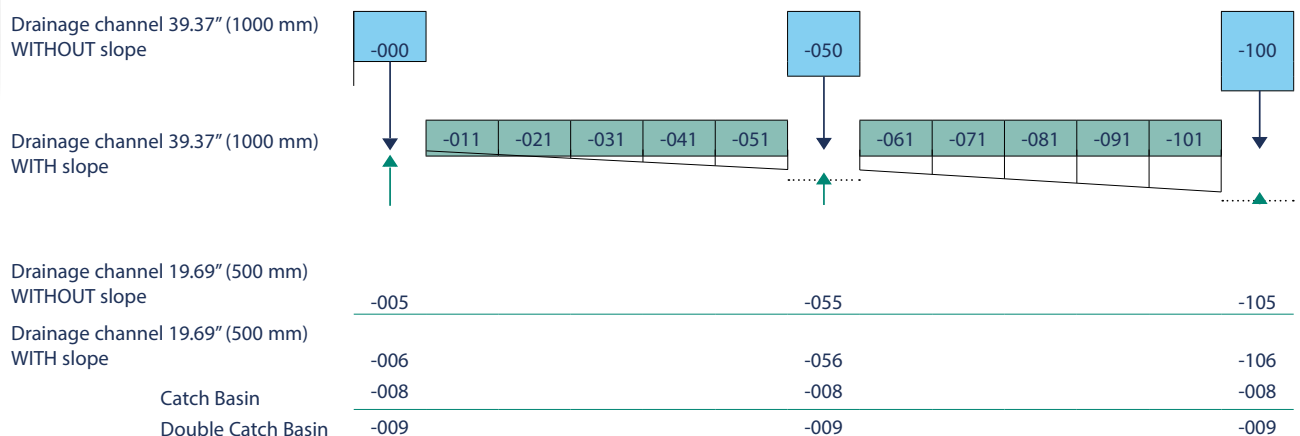
- Screwless, patented locking system that reduces installation time
- Reduces time of installation
- Available flat and pre-sloped
- Galvanized Steel Slot ADA
- Galvanized Steel Mesh
- Ductile Iron
- Load Class A & C
- High Water Absorption
- Fiber-reinforced concrete C35 / 45 channel
- Galvanized Steel edge rail
- Precast outlet at the base of the channel to connect 4" and 6" pipes

Fig.: Element as 4-way joint

### Areas of Application

- Sport Facilities and Stadiums
- Cycle paths and footpaths
- School yards
- Car parks

### Guide to Pre-Sloped Modular System



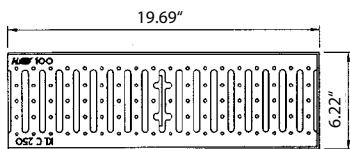
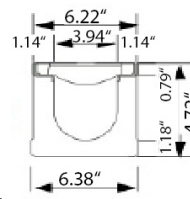
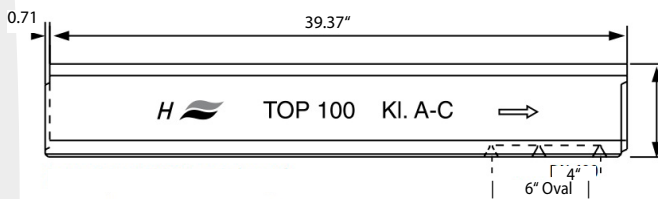
## TOP 100 SYSTEM (4")

TOP 100 (4") with Galvanized Steel Slot ADA Load Class A & C Grate and Galvanized Steel Edge Rails

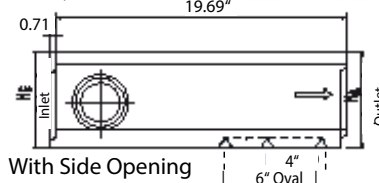


Product range

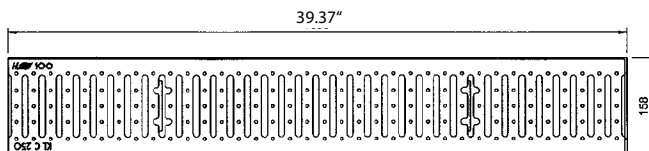
Part Description	Overall Depth Inches (mm)	Load Class A	Weight lbs	Load Class C	Weight lbs	Overall Depth		Pieces per pallet
		Part No. CHG3210-		Part No. CHG63430-		Inlet	Outlet	
Channel 39.37" (1m)	6.30" (160)	-000	70.55	-000	76.06	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	35.27	-005	38.58	6.30"(160)	6.30"(160)	48
Channel 19.69"(0.5m) with Side Opening		-006	34.17	-006	36.38	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	82.67	-050	88.18	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	41.89	-055	45.19	7.28"(185)	7.28"(185)	48
Channel 19.69"(0.5m) with Side Opening		-056	39.68	-056	42.99	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	95.90	-100	102.51	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	46.30	-105	49.60	8.27"(210)	8.27"(210)	48
Channel 19.69"(0.5m) with Side Opening		-106	44.09	-106	47.40	8.27"(210)	8.27"(210)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	100.31	-008	103.62	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	73.85	-011	80.47	6.30"(160)	6.50"(165)	24
		-021	76.06	-021	81.57	6.50"(165)	6.69"(170)	24
		-031	78.26	-031	83.78	6.69"(170)	6.89"(175)	24
		-041	79.37	-041	84.88	6.89"(175)	7.09"(180)	24
		-051	81.57	-051	87.08	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	83.78	-061	89.29	7.28"(185)	7.48"(190)	24
		-071	87.08	-071	92.59	7.48"(190)	7.68"(195)	24
		-081	88.18	-081	93.70	7.68"(195)	7.87"(200)	24
		-091	92.59	-091	98.11	7.87"(200)	8.07"(205)	24
		-101	94.80	-101	100.31	8.07"(205)	8.27"(210)	24



Water Intake area 27.82 sq. ins.



With Side Opening



Water Intake area 55.65 sq. ins.



TOP100 (4") with Galvanized Steel Slot ADA Grate

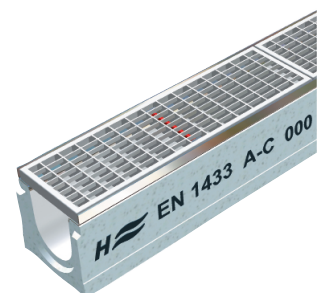
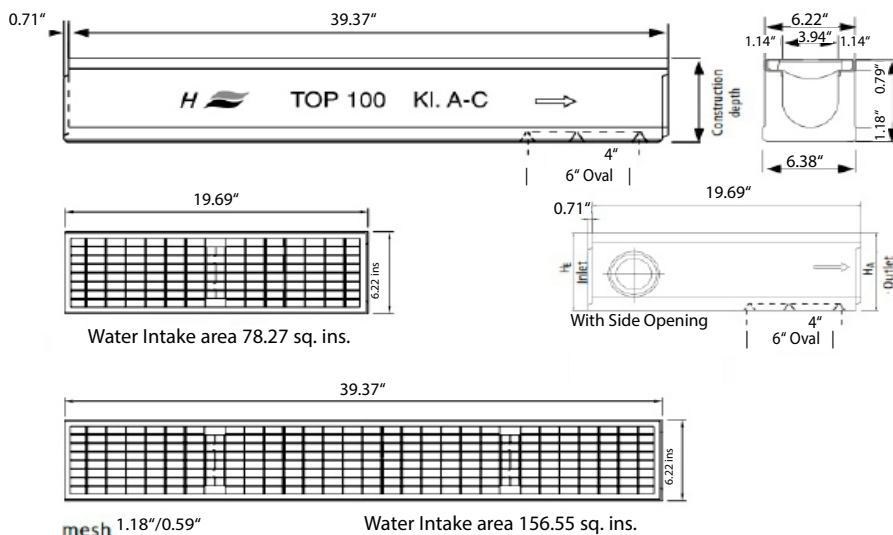


TOP 100 (4") with Galvanized Steel Mesh Load Class C Grate and Galvanized Steel Edge Rails



Product range

Part Description	Overall Depth Inches (mm)	Load Class C Part No. CHG63230-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Channel 39.37" (1m)	6.30" (160)	-000	74.96	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	37.48	6.30"(160)	6.30"(160)	48
Channel 19.69"(0.5m) with Side Opening		-006	35.27	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	87.08	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	44.09	7.28"(185)	7.28"(185)	48
Channel 19.69"(0.5m) with Side Opening		-056	41.89	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	100.31	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	48.50	8.27"(210)	8.27"(210)	48
Channel 19.69"(0.5m) with Side Opening		-106	46.30	8.27"(210)	8.27"(210)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	103.62	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	78.26	6.30"(160)	6.50"(165)	24
		-021	80.47	6.50"(165)	6.69"(170)	24
		-031	82.67	6.69"(170)	6.89"(175)	24
		-041	83.78	6.89"(175)	7.09"(180)	24
		-051	85.98	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	88.18	7.28"(185)	7.48"(190)	24
		-071	91.49	7.48"(190)	7.68"(195)	24
		-081	92.59	7.68"(195)	7.87"(200)	24
		-091	98.11	7.87"(200)	8.07"(205)	24
		-101	99.21	8.07"(205)	8.27"(210)	24



TOP100 (4") with Galvanized Steel Mesh Grate

TOP 100 (4") with Ductile Iron Load Class C Grate and Galvanized Steel Edge Rails



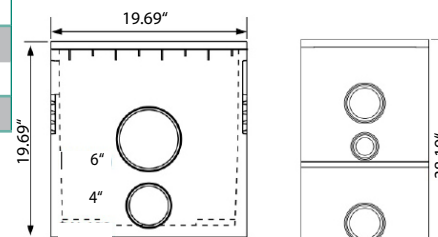
Product range

Part Description	Overall Depth Inches (mm)	Load Class C Part No. CHG63130-	Weight lbs	Overall Depth Inches (mm) Inlet	Overall Depth Inches (mm) Outlet	Pieces per Pallet
Channel 39.37" (1m)	6.30" (160)	-000	102.74	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	50.71	6.30"(160)	6.30"(160)	48
Channel 19.69"(0.5m) with Side Opening		-006	49.60	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	108.47	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	57.32	7.28"(185)	7.28"(185)	48
Channel 19.69"(0.5m) with Side Opening		-056	56.22	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	116.62	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	59.52	8.27"(210)	8.27"(210)	48
Channel 19.69"(0.5m) with Side Opening		-106	58.42	8.27"(210)	8.27"(210)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	112.44	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	103.62	6.30"(160)	6.50"(165)	24
		-021	104.72	6.50"(165)	6.69"(170)	24
		-031	105.82	6.69"(170)	6.89"(175)	24
		-041	106.92	6.89"(175)	7.09"(180)	24
		-051	108.03	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	109.57	7.28"(185)	7.48"(190)	24
		-071	111.33	7.48"(190)	7.68"(195)	24
		-081	112.88	7.68"(195)	7.87"(200)	24
		-091	114.42	7.87"(200)	8.07"(205)	24
		-101	115.96	8.07"(205)	8.27"(210)	24



TOP100 (4") with Ductile Iron Grate

Accessories for ALL TOP 100



Catch Basin incl. galvanized dirt catcher

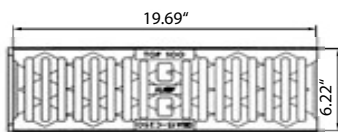
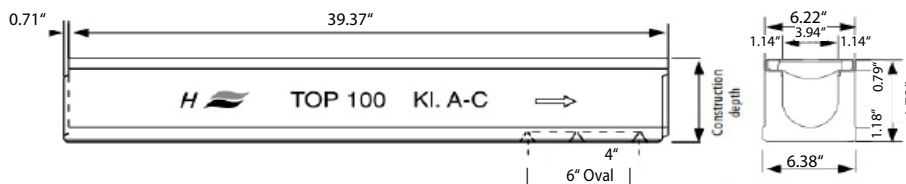
Double Catch Basin



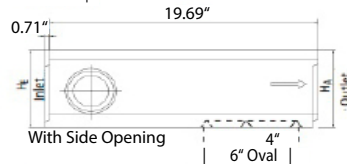
Closed End Piece Part.No.: CHG70011-10



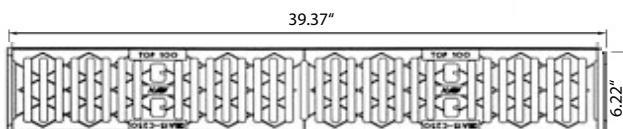
Open End Piece with 4" Pipe Connection Part.No.: CHG70011-20



Water Intake area 43.71 sq. ins.



With Side Opening



Water Intake area 87.42 sq. ins.

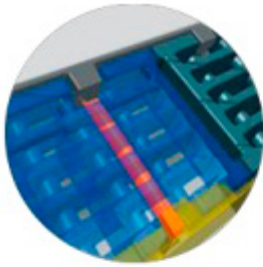


Foul air stop 4" Part.No.: CHG70031-00

### Product Description

The MAXI trench drain system is ideal for heavy duty jobs thanks to its ductile iron edge rails and grates. With a choice of load classes C, D, E or F, the MAXI system excels at projects requiring the maximum resistance and load bearing capabilities.

These 4", 6", 8" or 12" wide trench drains are available in 39.37" (1000mm) and 19.69" (500mm) long and they are easily joined together by connecting male and female profiles.



- Screwless, patented locking system that reduces time of installation
- Channels available in 4", 6", 8" and 12" wide
- Available flat (all sizes) and pre-sloped (4" and 6" only)



- Ductile Iron Grates
- Available in ADA and Heel Proof
- Longitudinal or Cross Slots
- Load Class C, D, E and F
- High Water Absorption



- Fiber-reinforced concrete C35 / 45 channel
- Ductile Iron Edge Rails
- Precast outlet for a vertical connection to 4" and 6" pipes.
- Connecting male and female profiles for precise fit

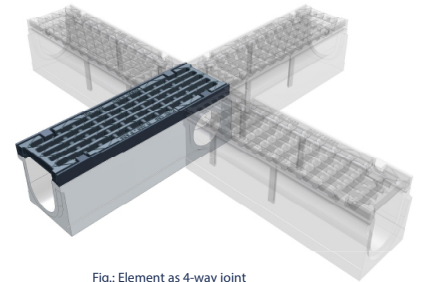
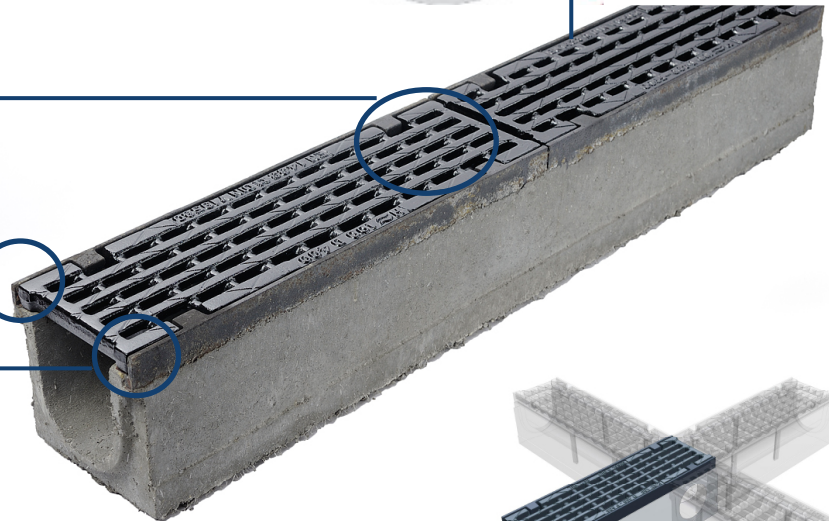


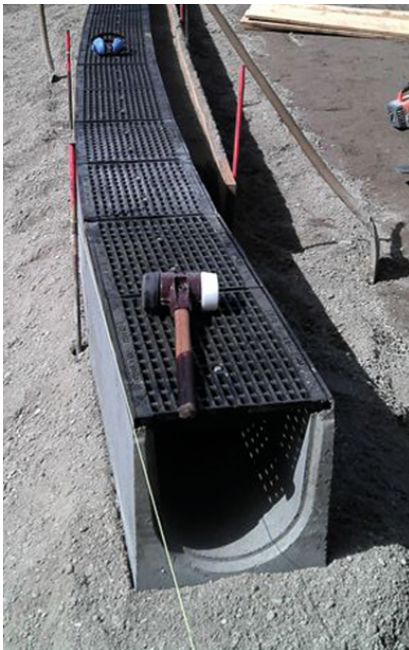
Fig.: Element as 4-way joint

### Areas of Application

- Roads and Highways
- Industrial areas with heavy goods traffic
- Car parks for heavy good vehicles / loading and unloading areas
- Airports / race circuits
- Public traffic area construction

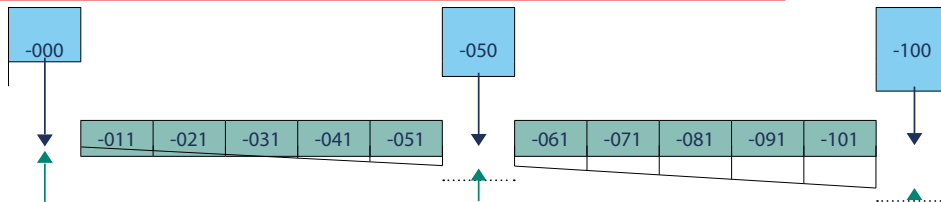


### Product Applications



### Modular System

Drainage channel 39.37" (1000 mm)  
WITHOUT slope



Drainage channel 39.37" (1000 mm)  
WITH slope

Drainage channel 19.69" (500 mm)  
WITHOUT slope

Drainage channel 19.69" (500 mm)  
WITH slope

Catch Basin

Double Catch Basin

-005	-055	-105
-006	-056	-106
-008	-008	-008
-009	-009	-009

## MAXI 100 SYSTEM (4")

MAXI 100 (4") with Ductile Iron Load Class C ADA Grate and Ductile Iron Edge Rails



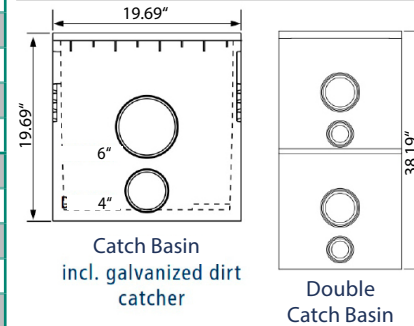
Product range

Part Description	Overall Depth Inches (mm)	Load Class C Part No. CHG61131-	Weight lbs	Overall Depth		Pieces per pallet
				Inlet	Outlet	
Channel 39.37" (1m)	6.30" (160)	-000	99.21	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	54.01	6.30"(160)	6.30"(160)	48
Channel 19.69"(0.5m) with Side Opening		-006	45.19	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	108.03	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	51.81	7.28"(185)	7.28"(185)	48
Channel 19.69"(0.5m) with Side Opening		-056	51.81	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	119.05	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	54.01	8.27"(210)	8.27"(210)	48
Channel 19.69"(0.5m) with Side Opening		-106	54.01	8.27"(210)	8.27"(210)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	109.13	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	98.11	6.30"(160)	6.50"(165)	24
		-021	98.11	6.50"(165)	6.69"(170)	24
		-031	98.11	6.69"(170)	6.89"(175)	24
		-041	99.21	6.89"(175)	7.09"(180)	24
		-051	101.41	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	103.62	7.28"(185)	7.48"(190)	24
		-071	106.92	7.48"(190)	7.68"(195)	24
		-081	108.03	7.68"(195)	7.87"(200)	24
		-091	111.33	7.87"(200)	8.07"(205)	24
		-101	114.64	8.07"(205)	8.27"(210)	24

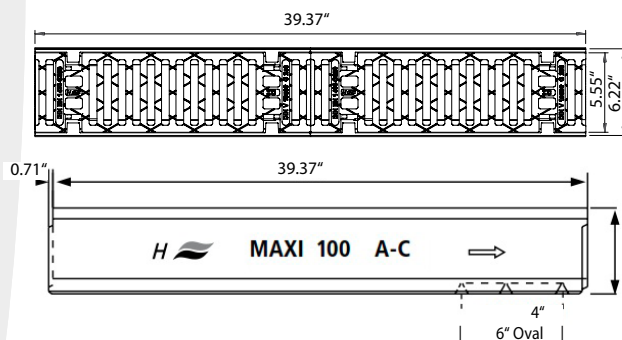


MAXI 100 (4") with Load Class C Ductile Iron grate with cross slots

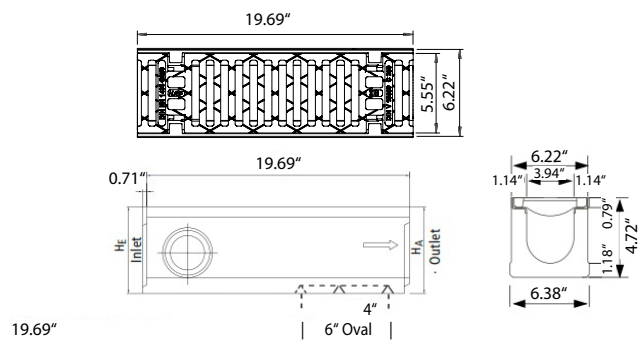
Accessories for ALL MAXI 100 Load Class C, D, E and F



Channel with 2 grates, water intake area 85.87 sq. ins



Water Intake area 42.93 sq. ins.





## MAXI 100 SYSTEM (4")

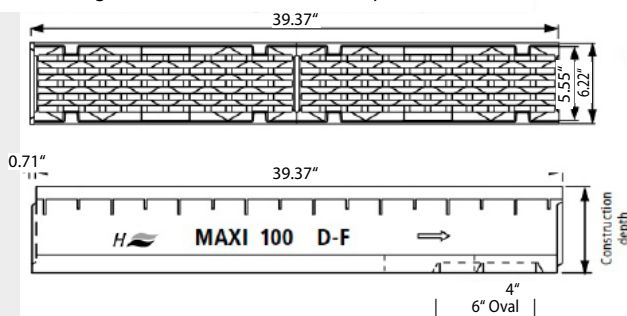
MAXI 100 (4") with Ductile Iron ADA Load Class D & F Grate and Ductile Iron Edge Rails



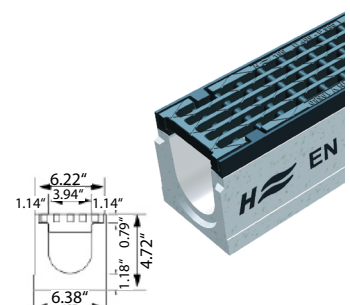
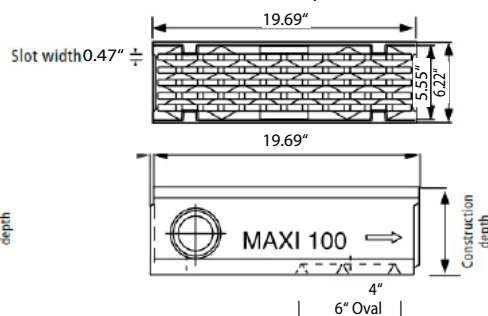
Product range

Part Description	Overall Depth Inches (mm)	Load Class D Part No. CHG61140-	Weight lbs	Load Class F Part No. CHG61160-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
						Inlet	Outlet	
Channel 39.37" (1m)	6.30" (160)	-000	112.44	-000	112.44	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	51.81	-005	51.81	6.30"(160)	6.30"(160)	48
19.69" with Side Opening		-006	50.71	-006	50.71	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	122.36	-050	122.36	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	58.42	-055	58.42	7.28"(185)	7.28"(185)	48
19.69" with Side Opening		-056	57.32	-056	57.32	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	133.38	-100	133.38	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	49.60	-105	49.60	8.27"(210)	8.27"(210)	48
19.69" with Side Opening		-106	47.40	-106	47.40	8.27"(210)	8.27"(210)	48
Channel 39.37" (1m)	9.25" (235)	-150	137.79	-150	137.79	9.25"(235)	9.25"(235)	24
Channel 19.69" (0.5m)		-155	68.34	-155	68.34	9.25"(235)	9.25"(235)	48
19.69" with Side Opening		-156	68.34	-156	68.34	9.25"(235)	9.25"(235)	48
Channel 39.37" (1m)	10.23" (260)	-200	143.30	-200	143.30	10.23"(260)	10.23"(260)	24
Channel 19.69" (0.5m)		-205	71.65	-205	71.65	10.23"(260)	10.23"(260)	48
19.69" with Side Opening		-206	71.65	-206	71.65	10.23"(260)	10.23"(260)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	114.64	-008	114.64	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	106.92	-011	113.54	6.30"(160)	6.50"(165)	24
		-021	109.13	-021	115.74	6.50"(165)	6.69"(170)	24
		-031	111.33	-031	117.95	6.69"(170)	6.89"(175)	24
		-041	112.44	-041	120.15	6.89"(175)	7.09"(180)	24
		-051	114.64	-051	122.36	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	116.84	-061	124.56	7.28"(185)	7.48"(190)	24
		-071	120.15	-071	126.77	7.48"(190)	7.68"(195)	24
		-081	121.25	-081	128.97	7.68"(195)	7.87"(200)	24
		-091	124.56	-091	131.18	7.87"(200)	8.07"(205)	24
		-101	127.87	-101	133.38	8.07"(205)	8.27"(210)	24

Channel with 2 grates, water intake area 79.36 sq. ins



Water intake area 39.68 sq. ins



MAXI 100 (4") with Load Class F Ductile Iron grate with longitudinal slots

## MAXI 100 SYSTEM (4")

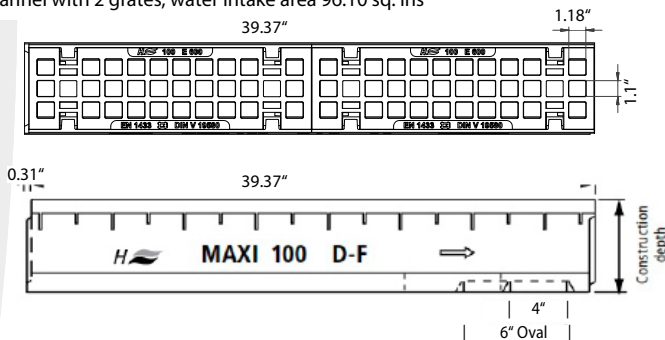
MAXI 100 (4") with Ductile Iron Load Class E Mesh Grate and Ductile Iron Edge Rails



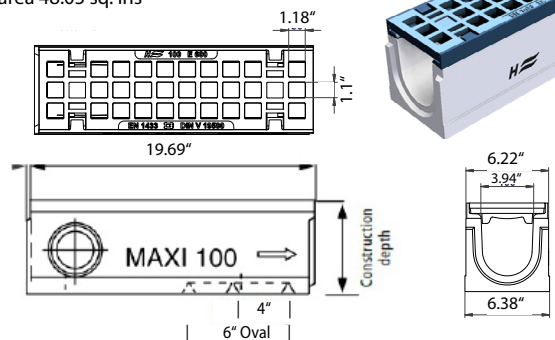
Product range

Part Description	Overall Depth Inches (mm)	Load Class E Part No. CHG62150-	Weight lbs	Overall Depth Inches (mm) Inlet	Overall Depth Inches (mm) Outlet	Pieces per pallet
Channel 39.37" (1m)	6.30" (160)	-000	112.44	6.30"(160)	6.30"(160)	24
Channel 19.69" (0.5m)		-005	51.81	6.30"(160)	6.30"(160)	48
19.69" with Side Opening		-006	50.71	6.30"(160)	6.30"(160)	48
Channel 39.37" (1m)	7.28" (185)	-050	122.36	7.28"(185)	7.28"(185)	24
Channel 19.69" (0.5m)		-055	58.42	7.28"(185)	7.28"(185)	48
19.69" with Side Opening		-056	57.32	7.28"(185)	7.28"(185)	48
Channel 39.37" (1m)	8.27" (210)	-100	133.38	8.27"(210)	8.27"(210)	24
Channel 19.69" (0.5m)		-105	59.52	8.27"(210)	8.27"(210)	48
19.69" with Side Opening		-106	62.83	8.27"(210)	8.27"(210)	48
Channel 39.37" (1m)	9.25" (235)	-150	137.79	9.25"(235)	9.25"(235)	24
Channel 19.69" (0.5m)		-155	68.34	9.25"(235)	9.25"(235)	48
19.69" with Side Opening		-156	68.34	9.25"(235)	9.25"(235)	48
Channel 39.37" (1m)	10.23" (260)	-200	143.30	10.23"(260)	10.23"(260)	24
Channel 19.69" (0.5m)		-205	71.65	10.23"(260)	10.23"(260)	48
19.69" with Side Opening		-206	71.65	10.23"(260)	10.23"(260)	48
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	114.64	19.69"(500)	19.69"(500)	10
Channels with 0.5% Slope 39.37"(1m)	6.30"(160) - 7.28"(185)	-011	106.92	6.30"(160)	6.50"(165)	24
		-021	109.13	6.50"(165)	6.69"(170)	24
		-031	111.33	6.69"(170)	6.89"(175)	24
		-041	112.44	6.89"(175)	7.09"(180)	24
		-051	114.64	7.09"(180)	7.28"(185)	24
Channels with 0.5% Slope 39.37"(1m)	7.28"(185) - 8.27"(210)	-061	116.84	7.28"(185)	7.48"(190)	24
		-071	120.15	7.48"(190)	7.68"(195)	24
		-081	121.25	7.68"(195)	7.87"(200)	24
		-091	124.56	7.87"(200)	8.07"(205)	24
		-101	127.87	8.07"(205)	8.27"(210)	24

Channel with 2 grates, water intake area 96.10 sq. ins



Water intake area 48.05 sq. ins

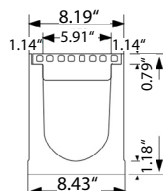
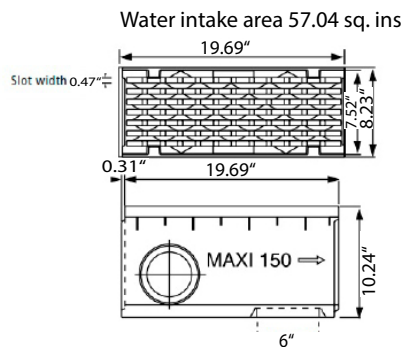
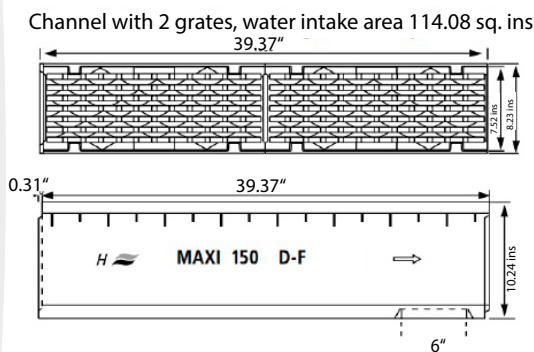


## MAXI 150 SYSTEM (6")

MAXI 150 (6") with Ductile Iron ADA Load Class D & F Grate and Ductile Iron Edge Rails



Product range						Overall Depth		Pieces
Part Description	Overall Depth Inches (mm)	Load Class D Part No. CHG61540-	Weight lbs	Load Class F Part No. CHG61560-	Weight lbs	Inlet	Outlet	per pallet
Channel 39.37" (1m)	8.27" (210)	-000	169.76	-000	169.76	8.27"(210)	8.27"(210)	20
Channel 19.69" (0.5m)		-005	80.47	-005	84.66	8.27"(210)	8.27"(210)	30
Channel 19.69"(0.5m) with Side Opening		-006	79.37	-006	79.37	8.27"(210)	8.27"(210)	30
Channel 39.37" (1m)	10.23" (260)	-050	185.19	-050	185.19	10.23"(260)	10.23"(260)	20
Channel 19.69" (0.5m)		-055	89.29	-055	91.05	10.23"(260)	10.23"(260)	30
Channel 19.69"(0.5m) with Side Opening		-056	88.18	-056	88.18	10.23"(260)	10.23"(260)	30
Channel 39.37" (1m)	12.20" (310)	-100	194.01	-100	198.42	12.20"(310)	12.20"(310)	15
Channel 19.69" (0.5m)		-105	98.11	-105	99.21	12.20"(310)	12.20"(310)	30
Channel 19.69"(0.5m) with Side Opening		-106	97.00	-106	94.80	12.20"(310)	12.20"(310)	30
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	143.30	-008	143.30	19.69"(500)	19.69"(500)	10
Channels with 1% Slope 39.37"(1m)	8.27"(210) - 10.24"(260)	-011	164.24	-011	173.28	8.27"(210)	8.66"(220)	20
		-021	167.11	-021	175.71	8.66"(220)	9.06"(230)	20
		-031	170.64	-031	179.68	9.06"(230)	9.45"(240)	20
		-041	175.27	-041	180.78	9.45"(240)	9.84"(250)	20
		-051	176.37	-051	182.98	9.84"(250)	10.23"(260)	20
Channels with 1% Slope 39.37"(1m)	10.24"(260) - 12.24"(310)	-061	181.00	-061	186.73	10.23"(260)	10.63"(270)	16
		-071	182.54	-071	194.67	10.63"(270)	11.02"(280)	16
		-081	186.29	-081	191.14	11.02"(280)	11.42"(290)	16
		-091	188.94	-091	198.20	11.42"(290)	11.81"(300)	16
		-101	194.01	-101	198.42	11.81"(300)	12.20"(310)	16



Ductile Iron grate with longitudinal slots

Technologies

## MAXI 150 SYSTEM (6")

MAXI 150 (6") with Ductile Iron Load Class E Grate and Ductile Iron Edge Rails



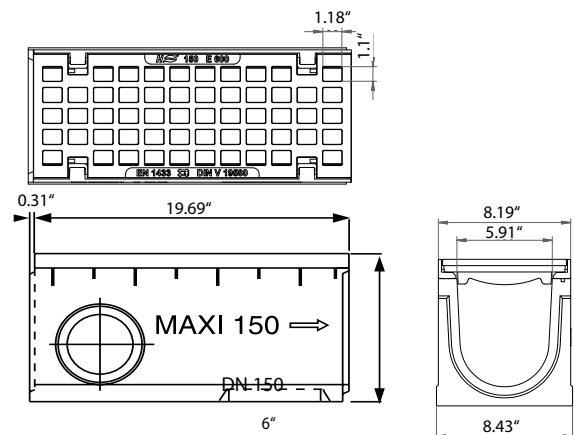
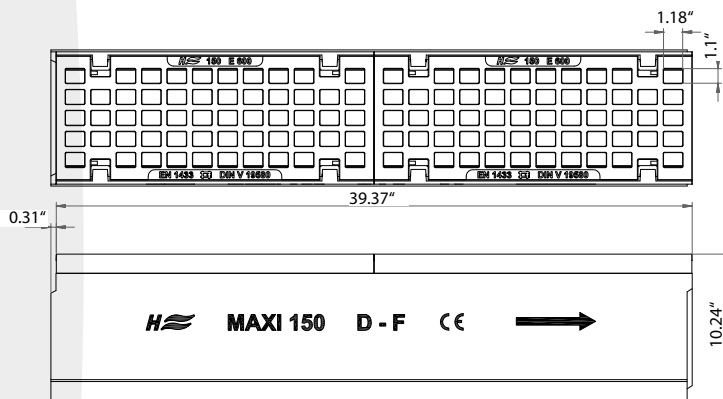
Part Description	Overall Depth Inches (mm)	Load Class E Part No. CHG62150-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Channel 39.37" (1m)	8.27" (210)	-000	169.76	8.27"(210)	8.27"(210)	20
Channel 19.69" (0.5m)		-005	80.47	8.27"(210)	8.27"(210)	30
Channel 19.69"(0.5m) with Side Opening		-006	79.37	8.27"(210)	8.27"(210)	30
Channel 39.37" (1m)	10.23" (260)	-050	185.19	10.23"(260)	10.23"(260)	20
Channel 19.69" (0.5m)		-055	89.29	10.23"(260)	10.23"(260)	30
Channel 19.69"(0.5m) with Side Opening		-056	88.18	10.23"(260)	10.23"(260)	30
Channel 39.37" (1m)	12.20" (310)	-100	194.01	12.20"(310)	12.20"(310)	16
Channel 19.69" (0.5m)		-105	98.11	12.20"(310)	12.20"(310)	30
Channel 19.69"(0.5m) with Side Opening		-106	97.00	12.20"(310)	12.20"(310)	30
Catch Basin 19.69" (0.5m)	19.69" (500)	-008	143.30	19.69"(500)	19.69"(500)	10
Channels with 1% Slope 39.37"(1m)	8.27"(210) - 10.24"(260)	-011	164.24	8.27"(210)	8.66"(220)	20
		-021	167.11	8.66"(220)	9.06"(230)	20
		-031	170.64	9.06"(230)	9.45"(240)	20
		-041	175.27	9.45"(240)	9.84"(250)	20
		-051	176.37	9.84"(250)	10.23"(260)	20
Channels with 1% Slope 39.37"(1m)	10.24"(260) - 12.24"(310)	-061	181.00	10.23"(260)	10.63"(270)	16
		-071	182.54	10.63"(270)	11.02"(280)	16
		-081	186.29	11.02"(280)	11.42"(290)	16
		-091	188.94	11.42"(290)	11.81"(300)	16
		-101	194.01	11.81"(300)	12.20"(310)	16



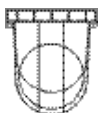
Ductile Iron grate with longitudinal slots

Channel with 2 grates, water intake area 133.31 sq. ins

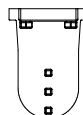
Water intake area 66.65 sq. ins



### End Caps for all MAXI150



Open or Closed End Cap (Plastic)  
For All channels  
Part.No.: CHG70011-51



Closed End Cap (Iron)  
Only for channels between 8.27" and 12.20" high  
Part. No.: CHG70011-52

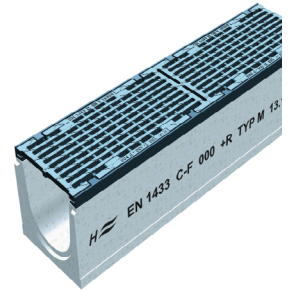
## MAXI 200 SYSTEM (8")

MAXI 200 (8") with Ductile Iron ADA Load Class D & F Grate and Ductile Iron Edge Rails



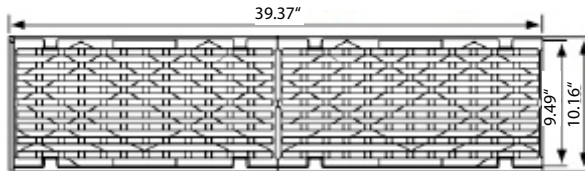
### Product range

Part Description	Load Class D Part No. CHG61240-	Load Class F Part No. CHG61260-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
				Inlet	Outlet	
Channel 39.37"(1m)	-050	-050	242.51	12.20"(310)	12.20"(310)	12
Channel 19.69"(0.5m)	-055	-055	121.25	12.20"(310)	12.20"(310)	24
Channel 19.69"(0.5m) with Side Opening	-056	-056	121.25	12.20"(310)	12.20"(310)	24
Catch Basin	-008	-008	158.73	21.65"(550)	21.65"(550)	6
Double Catch Basin	-009	-009	317.47	43.30"(1100)	43.30"(1100)	5

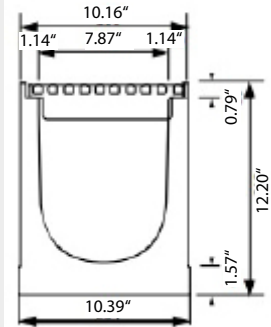
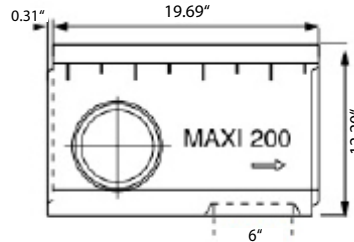
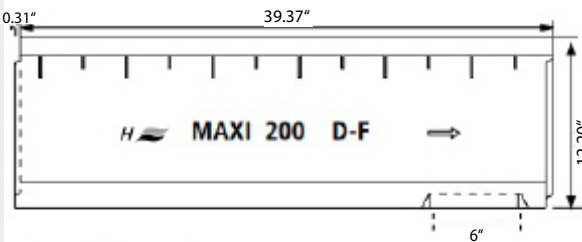
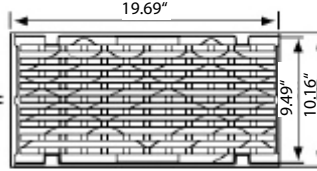


Ductile Iron grate with longitudinal slots

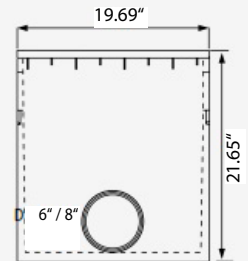
Channel with 2 grates, water intake area 150.35 sq. ins



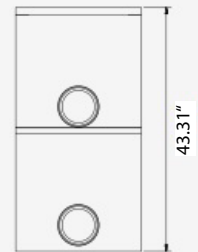
Water intake area 75.17 sq. ins



### Accessories for MAXI 150 / 200

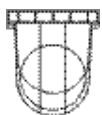


Catch Basin includes galvanized dirt catcher

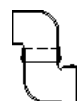


Double Catch Basin

### End Cap for All MAXI200



End Cap (Plastic)  
Part.No.: CHG70012-00



6" Foul air stop  
Part.No.:  
CHG70031-50



## MAXI 200 SYSTEM (8")

MAXI 200 (8") with Ductile Iron Load Class E Grate and Ductile Iron Edge Rails



Product range

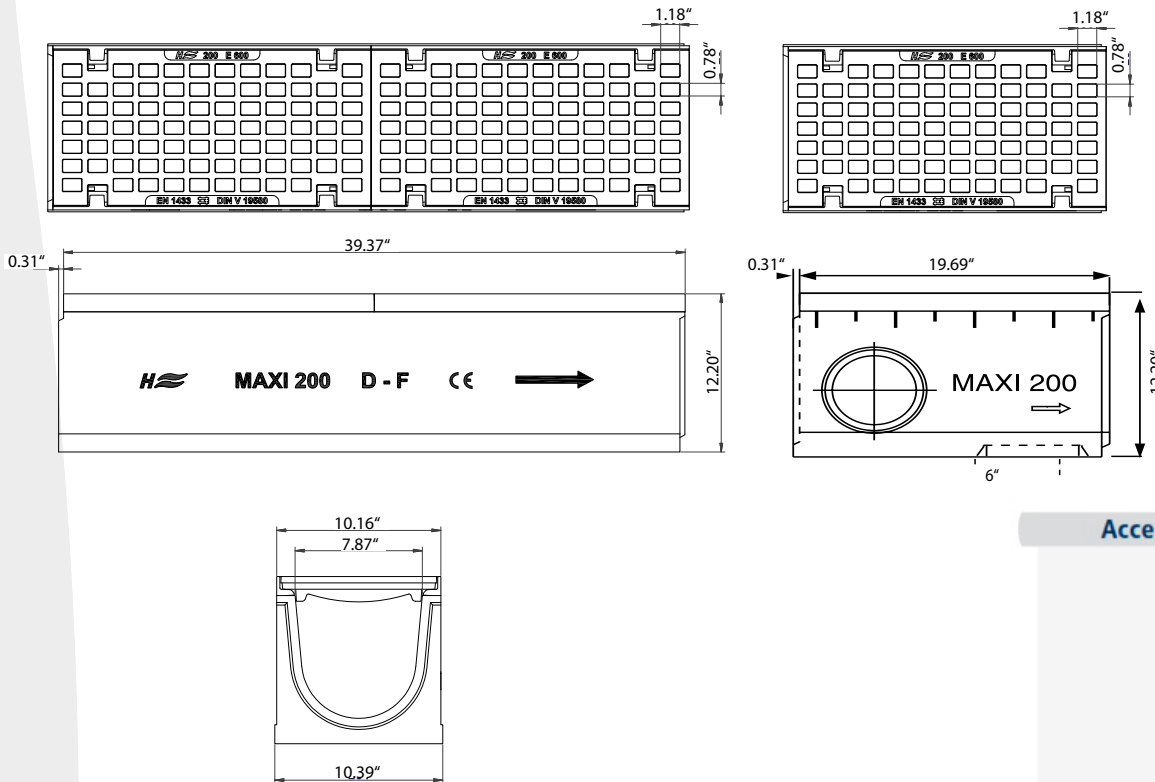
Part Description	Load Class E Part No. CHG62250-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
			Inlet	Outlet	
Channel 39.37"(1m)	-050	234.79	12.20"(310)	12.20"(310)	12
Channel 19.69"(0.5m)	-055	113.53	12.20"(310)	12.20"(310)	24
Channel 19.69"(0.5m) with Side Opening	-056	113.53	12.20"(310)	12.20"(310)	24
Catch Basin	-008	151.01	21.65"(550)	21.65"(550)	6
Double Catch Basin	-009	317.47	43.30"(1100)	43.30"(1100)	5

Channel with 2 grates, water intake area 161.21 sq. ins

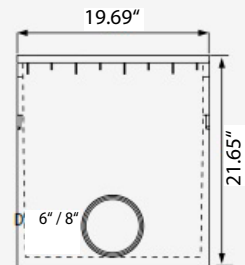
Water intake area 80.60 sq. ins



Ductile Iron grate with longitudinal slots

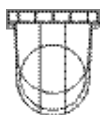


Accessories for MAXI 150 / 200



Catch Basin includes galvanized dirt catcher

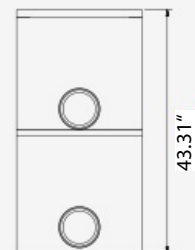
End Cap for All MAXI200



End Cap (Plastic)  
Part.No.: CHG70012-00



6" Foul air stop  
Part.No.: CHG70031-50



Double Catch Basin

**SPECIAL APPLICATIONS**

**System MAXI F1 – High Security Trench Drain**

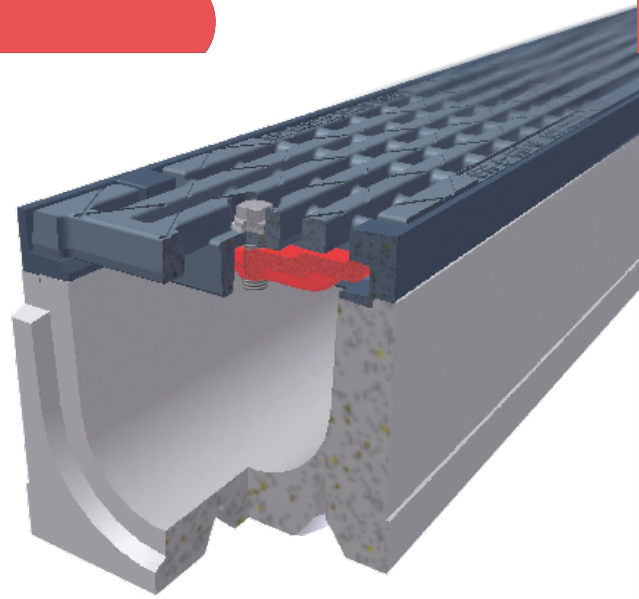
The trench drain system for applications with extremely demanding security requirements.

The absorption of maximum undertow and brake forces in combination with sufficient fire resistance are the requirements for pre-fabricated parts in areas with extreme traffic loads. Longitudinal slots prevent overflowing water and allow the absorption of twice the amount of water.

A special screw locking system with the benefits of stainless steel screws:

- Easy to maintain, only 2 instead of 4 screws per grating- centrally arranged, no contamination at the screw recess, resilient to corrosion
- Through-screw-thread with self cleaning system threaded blind holes for screw connections at edges

The combination of material and design benefits was the pre-condition for fulfilling the demanding security requirements at the Formula 1 circuits in Shanghai and Istanbul and led to the MAXI F1 being selected along with cost-efficiency considerations.



F1 - Shanghai Racing Circuit

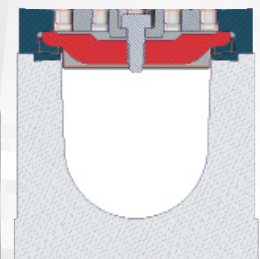
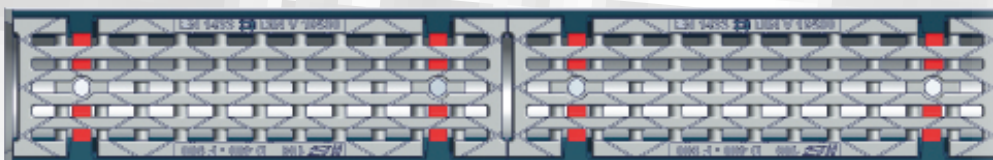
**F1 Locking Available for MAXI 100 (4") / 150 (6") / 200 (8") / 300 (12")**

Length: 39.37" (1meter)  
 Inner width: 4"(100 mm) / 6"(150 mm) / 8"(200 mm) / 12"(300 mm)  
 Inlet diameter: 79.36 / 114.08 / 150.35/ 173.6 sq. ins

MAXI F1 100 (4") / 150 (6") / 200 (8") Load Class F  
 MAXI F1 300 (12") Load Class E & F

Complete with a channel base of fiber-reinforced, frost and de-icing salt resilient concrete C35 / 45 with ductile iron edge protection anchored throughout

- 8 interlocking points per meter (39.37")
- 2 gratings made of ductile iron with longitudinal slots (0.47 ins interspace)
- Traffic safe special screw locking system of the cover gratings
- 4 custom screws per meter and 8 interlocking points per meter
- CE compliant
- Secure anchoring prevents "outgrowing"
- Prefabricated parts for easy assembling of the sections
- Secure rebated joint for optional sealing in line with "WHSG"
- Pre-cast base for vertical 4" and 6" pipe connection





### Product Description

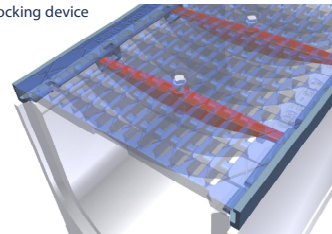
The MAXI 300 (12") is available with the "F1" locking system, which was developed for Formula 1 race circuits and meets the most rigorous requirements in high security areas.



Bllster-Berg Circuit, Germany

- Load Class E and F
- High security "F1" locking system
- For areas with extremely high wheel loads e.g. harbor facilities
- 12" Wide
- Flat 39.37" (1 meter) or 19.69" (0.5 meters) long

Fig.: locking device



### Areas of application

- Industrial areas with heavy goods traffic
- Car parks for heavy goods vehicles
- Loading and unloading areas
- Race Circuits



## MAXI 300 (12") SYSTEM

MAXI 300 (12") with Ductile Iron ADA Load Class E & F Grate and Ductile Iron Edge Rails



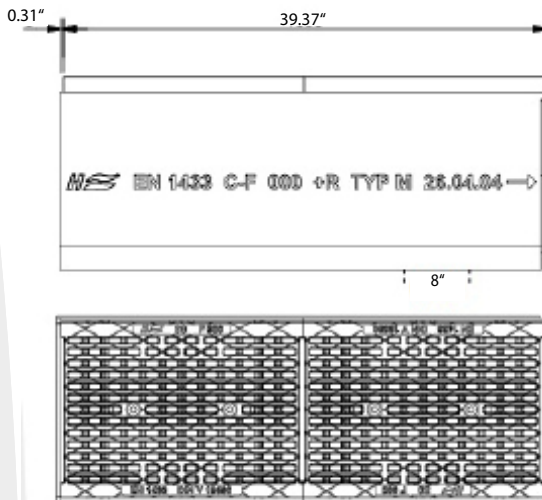
### Product range

Part Description	Load Class E Part No. CHG66350-	Weight lbs	Load Class F Part No. CHG66360-	Weight lbs	Overall Depth Inches (mm)		Pieces per pallet
					Inlet	Outlet	
Channel 39.37"(1m)	-0501	396.83	-0501	436.51	15.75(400)	15.75(400)	6
Channel 19.69"(0.5m)	-0551	198.41	-0551	202.82	15.75(400)	15.75(400)	4
Catch Basin	-0081	306.44	-0081	306.44	29.53(750)	29.53(750)	4

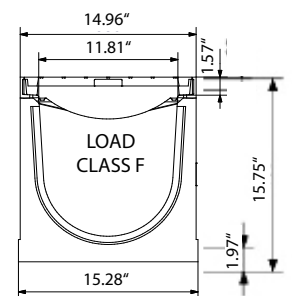
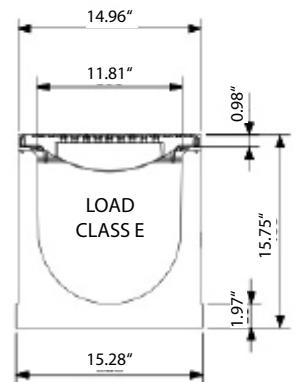
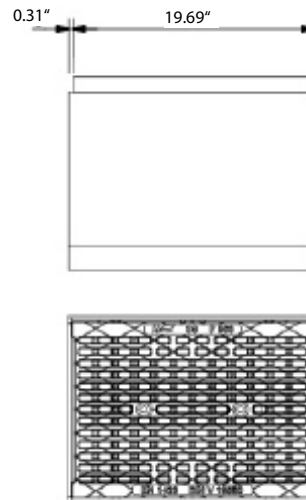
The MAXI 300 does not have a precast outlet underneath. However, channels with drilled holes underneath to create the outlet are available (Load Class E: Part No. CHG66350-0571 & Load Class F: Part No. CHG66360-0571)



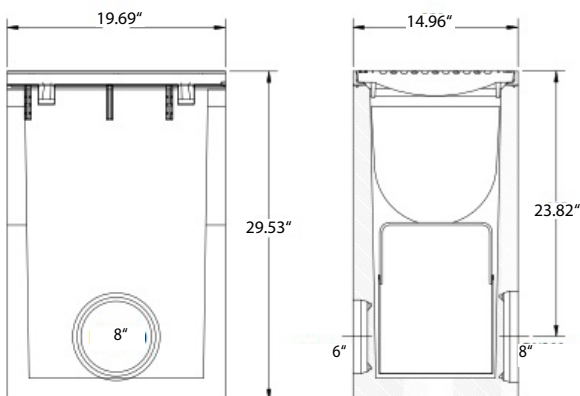
Channel with 2 grates, water intake area 173.60 sq. ins



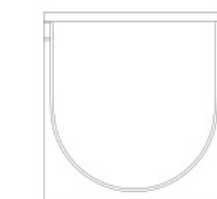
Water Intake area 86.80 sq. ins



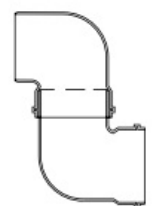
### Accessories



Catch Basin includes galvanized dirt catcher



Closed End Cap Iron (CHG70031-11)



8" Foul air stop  
Part.No.:  
CHG70032-00



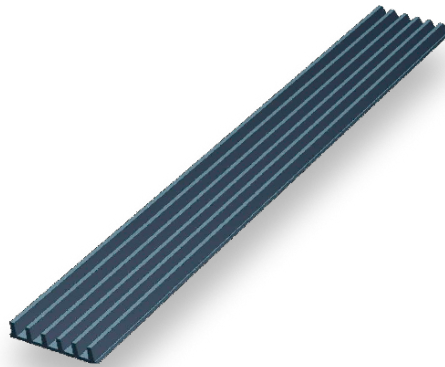
## HYDROline

### HYDROline

HYDROline is a flat drainage channel made on one ductile iron piece. Very easy to install as it sits directly on top of the concrete.

**Application areas:**

- Indoor and outdoor areas
- Indoor car parks, underground garages, parking decks, terraces, industrial plants etc.
- Pedestrian areas
- Areas with low rainfall

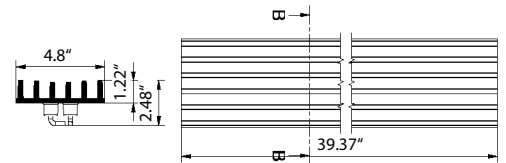


**Properties:**

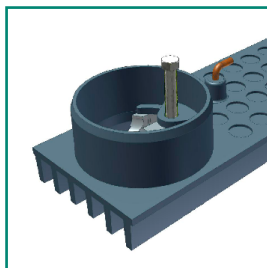
- Low concrete bed
- Ease of installation
- Extremely resistant
- Easy cleaning
- One piece = rattle free
- Fixes to the concrete bed thanks to built in anchors underneath

**Description / sizes:**

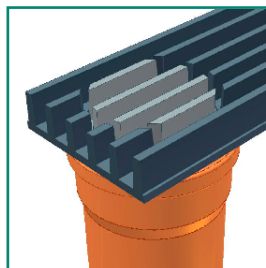
- Standard part approx. 4.72"(120mm) x 39.37"(1000mm)
- Part with outlet approx. 4.72"(120mm) x 39.37"(1000mm)
- Height without anchors approx. 1.18" (30mm)
- Load Class F 900kN (202,320 lbs)
- Ductile Iron



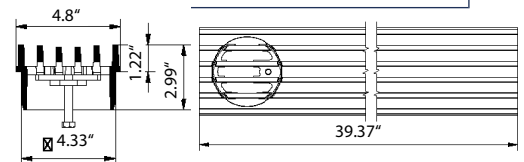
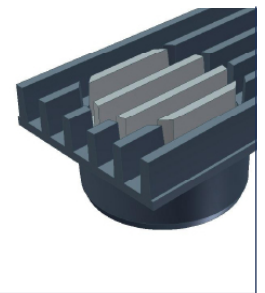
Part. No. CHG68000-000 26.45 lbs



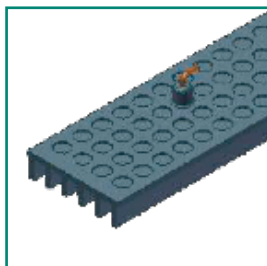
Security of grate due to bar = protection against anti-theft and vandalism



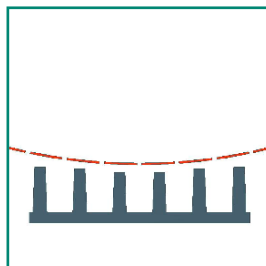
Channel with vertical outlet for 4" pipe



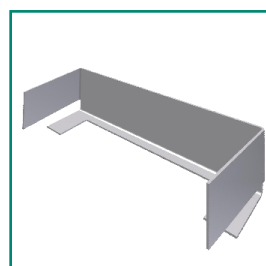
Part. No. CHG68000-018 26.45 lbs



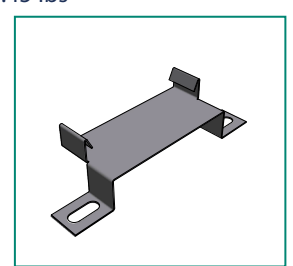
Anchors underneath help secure the channel to the concrete



Concave shape prevents overflow



End wall piece available Part No. CHG68001-700



Installation Support Part No. CHG68001-701



## HYDROblock SYSTEM 100 (4") / 200 (8") / 300 (12")

### One Piece Ductile Iron Trench Drain. Simple. Safe.

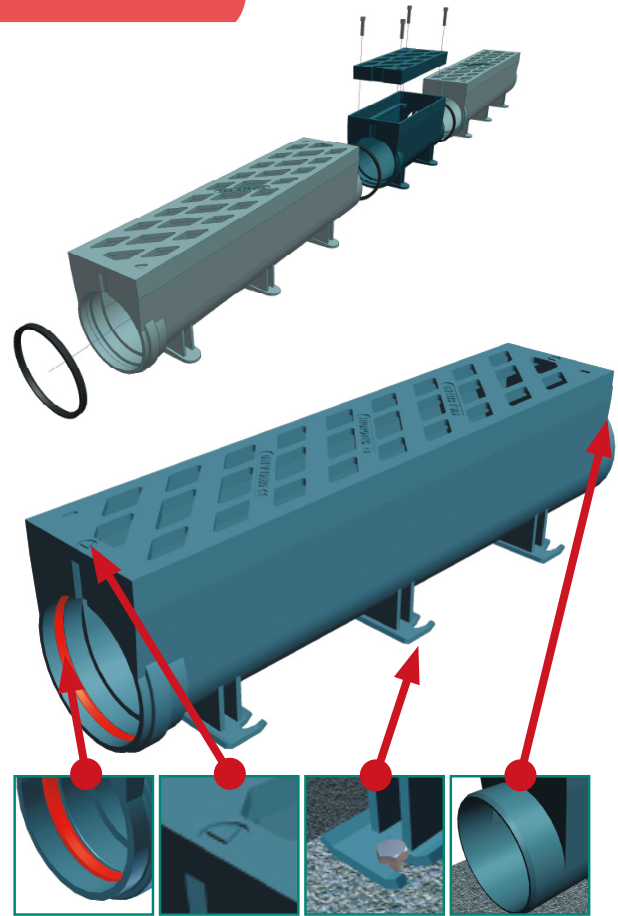
One piece trench drain system where the channel and the grate are casted together out of ductile iron. Available in 4", 8" and 12" wide.

This revolutionary, new, monolithic drainage channel system sets new standards in drainage technology.

Handling is substantially improved by the innovative seal system which enables the completion of water-tight, maintenance-free drainage channel lines with very little effort. Tried and trusted seal types used for standard plastic piping are deployed here. The pipe joint and spigot end version ensures easy handling and foolproof installation. The special elements available include both horizontal and vertical connectors.

The HYDROblock system is a type "I" channel type in line with EN 1433 standard and thus does not require additional concrete encasement. It simply requires a load-bearing foundation with installation shoring. This reduces the installation time considerably and means that the channel can be fully loaded immediately after installation.

The one piece design guarantees rattle-free operations and long-lasting traffic safety, especially in traffic areas with extreme loads, such as container terminals, truck loading zones and airports.

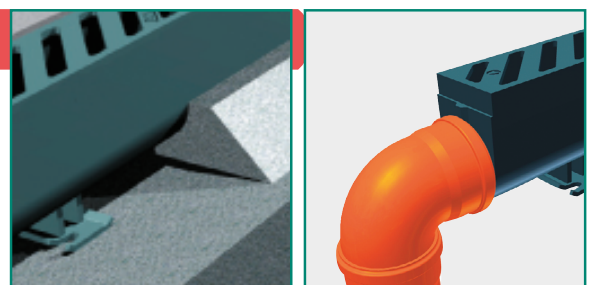


The first channel with sealing ring    Labeling of the flow direction    Pedestals for optional foundation installation    Long spigot end guarantees a reliable seal

- Minimal planning and installation requirement
- Low maintenance
- Theft and vandalism protection
- Best of class frost and de-icing salt resilience
- One piece design made of ductile iron
- Up to 50% greater run-in diameter compared with similar systems
- 4", 8" & 12"

### Areas of application

- Areas that require long-term traffic safety
- Installation at right angles to the road surface
- Container terminals
- Industrial areas with heavy traffic loads
- Airports and race circuits



Type I channel without additional concrete encasement

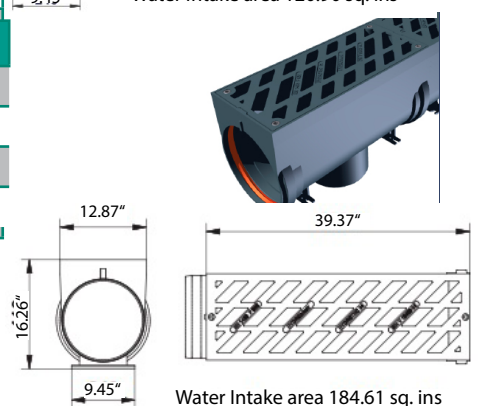
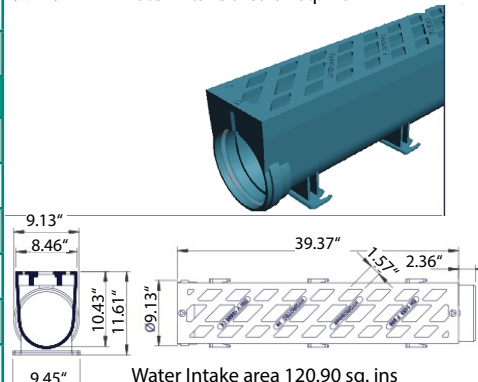
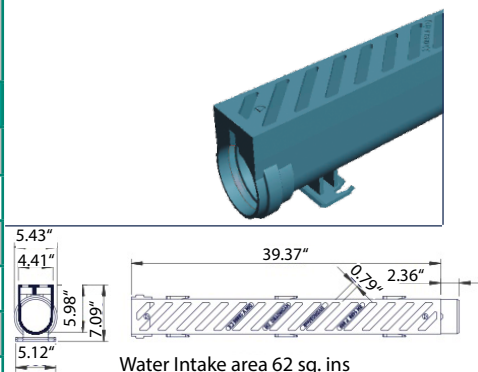
Joints with standard plastic pipes

## HYDROblock SYSTEM

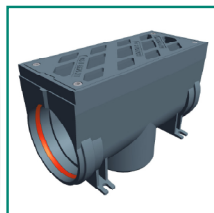
HYDROblock 100 (4") / 200 (8") / 300 (12") Load Class F



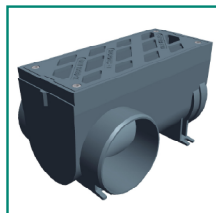
Part Description	Part No.	Weight lbs	Overall Depth Inches (mm)	Pieces per pallet
<b>HYDROblock 100 (4")</b>	<b>CHG60060-</b>			
39.37" (1m)	-050	55.12	7.09" (180)	40
19.69" (0.5m) With Outlet(s):				
1 Outlet: Vertical	-058	37.48	7.09" (180)	
2 Outlets: left & right	-358	37.48	7.09" (180)	
3 Outlets: face side & left & right	-458	39.68	7.09" (180)	
Catch Basin 19.69" (0.5m)				
with 4" outlet	-008	74.96	19.69" (500)	
<b>HYDROblock 200 (8")</b>	<b>CHG60260-</b>			
39.37" (1m)	-050	145.51	11.61" (295)	20
19.69" (0.5m) With Outlet(s):				
1 Outlet: Vertical	-058	92.59	11.61" (295)	
2 Outlets: left & right	-358	92.59	11.61" (295)	
Catch Basin 19.69" (0.5m)				
with 8" outlet	-008	132.28	19.69" (500)	
<b>HYDROblock 300 (12")</b>	<b>CHG60360-</b>			
39.37" (1m)	-050	242.51	16.26" (413)	20
19.69" (0.5m) With Outlet(s):				
1 Outlet: Vertical	-058	231.48	16.26" (413)	
2 Outlets: left & right	-358	234.79	16.26" (413)	



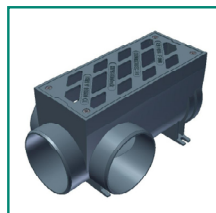
### Parts with Outlets



Vertical outlet with 1 pipe socket

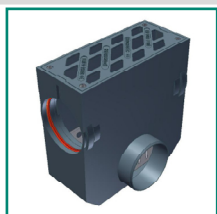


Outlet right & left with 2 pipe sockets

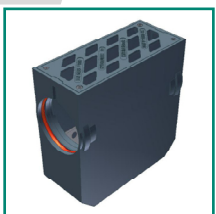


Outlet face side & right & left with 3 pipe sockets

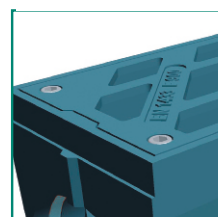
### Catch Basins



View from left



View from right

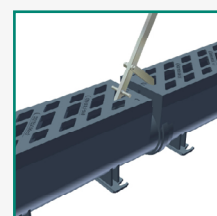


4x screw connection for noise-free seating and safe access for inspection work.

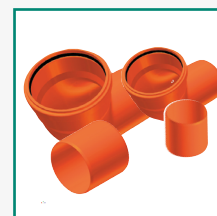


Maintenance free type with open, downward facing screw holes.

### Accessories for HYDROblock



Easy laying with laying tool



Fully compatible with standard PE and PP pipes

## Accessories for all Trench Drain Systems

ARTICLE	SAMPLE	PART NO.
Grate Locking Tool		CHG70099-00
Cleaning Shovel		CHG70099-50
Air Trap 4"		CHG70031-00
Air Trap 6"		CHG70031-50
<b>MINI 100</b>		
Closed End Cap for MINI100 (1 Galvanized Steel Part)		CHG70016-00
4" Pipe Connection (PVC) for MINI, TOP & MAXI100		CHG70021-00
<b>TOP 100 &amp; MAXI 100</b>		
Closed End Cap for All TOP & MAXI100 (2 Parts: Plastic Support + Galvanized Steel Cap)		CHG70011-10
Closed End Cap for 6.30" TOP & MAXI100: (1 Iron Part)		CHG70011-11
Closed End Cap for 7.28" TOP & MAXI100: (1 Iron Part)		CHG70011-12
Open End Cap for All TOP&MAXI100 with Connection to 4" Pipe (2 Parts: Plastic Support + Galvanized Steel Cap)		CHG70011-20
4" Pipe Connection (PVC) for MINI, TOP & MAXI100		CHG70021-00
6" Oval Pipe Connection (PVC) for underneath TOP/MAXI100		CHG70021-60
<b>MAXI 150</b>		
End Cap for MAXI150 (Open & Closed) (1 Plastic Part to close MAXI150 trench drains of all depths that can be cut to connect 6" Pipes)		CHG70011-51
6" Pipe Connection (PVC) for MAXI150		CHG70021-50
<b>MAXI 200 &amp; MAXI 300</b>		
End Cap for MAXI200 (Open & Closed) (1 Plastic Part to close MAXI200 trench drains that can be cut to connect 8" Pipes)		CHG70012-00
8" Pipe Connection (PVC) for MAXI 200 & MAXI300		CHG70022-00
Closed End Cap for MAXI300 (1 Iron Part)		CHG70031-11

Trench Drain Quantity Calculator

Required Run Length	Number of 39.37" (1m) HYDROTEC Channels	Number of 19.69" (0.5m) HYDROTEC Channels	Actual HYDROTEC Run Length	Required Run Length	Number of 39.37" (1m) HYDROTEC Channels	Number of 19.69" (0.5m) HYDROTEC Channels	Actual HYDROTEC Run Length
1'	0	1	1.64'	51'	15	1	50.85'
2'	0	1	1.64'	52'	16	0	52.49'
3'	1	0	3.28'	53'	16	0	52.49'
4'	1	0	3.28'	54'	16	1	54.13'
5'	1	1	4.92'	55'	17	0	55.77'
6'	2	0	6.56'	56'	17	0	55.77'
7'	2	0	6.56'	57'	17	1	57.41'
8'	2	1	8.20'	58'	17	1	57.41'
9'	3	0	9.84'	59'	18	0	59.06'
10'	3	0	9.84'	60'	18	1	60.70'
11'	3	1	11.48'	61'	18	1	60.70'
12'	3	1	11.48'	62'	19	0	62.34'
13'	4	0	13.12'	63'	19	0	62.34'
14'	4	0	13.12'	64'	19	1	63.98'
15'	4	1	14.76'	65'	20	0	65.62'
16'	5	0	16.40'	66'	20	0	65.62'
17'	5	0	16.40'	67'	20	1	67.26'
18'	5	1	18.04'	68'	21	0	68.90'
19'	6	0	19.69'	69'	21	0	68.90'
20'	6	0	19.69'	70'	21	1	70.54'
21'	6	1	21.33'	71'	21	1	70.54'
22'	7	0	22.97'	72'	22	0	72.18
23'	7	0	22.97'	73'	22	1	73.82'
24'	7	1	24.61'	74'	22	1	73.82'
25'	7	1	24.61'	75'	23	0	75.46'
26'	8	0	26.25'	76'	23	0	75.46'
27'	8	0	26.25'	77'	23	1	77.10'
28'	8	1	27.89'	78'	24	0	78.74'
29'	8	1	27.89'	79'	24	0	78.74'
30'	9	0	29.53'	80'	24	1	80.38'
31'	9	1	31.17'	81'	24	1	80.38'
32'	9	1	31.17'	82'	25	0	82.02'
33'	10	0	32.81'	83'	25	1	83.66'
34'	10	1	34.45'	84'	25	1	83.66'
35'	10	1	34.45'	85'	26	0	85.30'
36'	11	0	36.09'	86'	26	1	86.94'
37'	11	1	37.73'	87'	26	1	86.94'
38'	11	1	37.73'	88'	27	0	88.58'
39'	12	0	39.37'	89'	27	0	88.58'
40'	12	0	39.37'	90'	27	1	90.22'
41'	12	1	41.01'	91'	28	0	91.86'
42'	13	0	42.65'	92'	28	0	91.86'
43'	13	1	44.29'	93'	28	1	93.50'
44'	13	1	44.29'	94'	29	0	95.14'
45'	14	0	45.93'	95'	29	0	95.14'
46'	14	0	45.93'	96'	29	0	95.14'
47'	14	1	47.57'	97'	29	1	96.78'
48'	14	1	47.57'	98'	30	0	98.43'
49'	15	0	49.21'	99'	30	0	98.43'
50'	15	1	50.85'	100'	30	1	100.07'

## Installation Instructions

The trench drain type depends on the installation location, the corresponding traffic loads, and the decking planned. Installation locations are organized in classes A to F according to EN 1433 standard. As of class C all grates must be anchored to ensure traffic safety. The foundation of the trench drain must be suitable to bear the traffic load.

Horizontal loads arising from traffic or thermal behavior of the surface layer must be transferred by means of sufficiently dimensioned concrete encasement of the channel sections and by expansion joints running longitudinally to the channel, especially in case of adjoining concrete surfaces.

The laying direction of the channel is always opposite to the direction of flow and starts at the ground pipe joint. Subsequent surfaces must be executed to be approx. 0.11" (3mm) to 0.19" (5 mm) higher than the top edge of the grate or edge rail taking setting and compression into account.

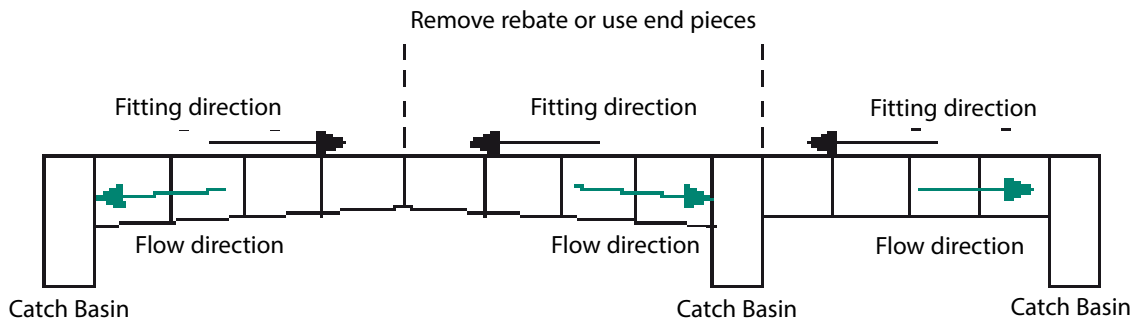
If extreme horizontal forces are expected at right angles to the trench drain, e.g. on railway crossings, ramps or highways, the trench drains should be secured laterally with reinforced decking concrete.

MINI / TOP / MAXI channel systems are manufactured to comply with EN 1433 Type M standard. This design requires a load bearing foundation and / or encasement to be able to absorb vertical and horizontal loads after installation. See installation instructions.

The HYDROblock channel system is manufactured in line with EN 1433 Type I. Concrete encasement is not required. This type requires a load-bearing foundation.

## Fitting Direction

The laying direction of the channel is always opposite to the direction of flow (green arrows!) and starts at the ground pipe joint. If elements are laid in two directions it is necessary to join two counterfacing elements. To avoid a gap remove the profile rebate with an angle grinder or use end pieces.

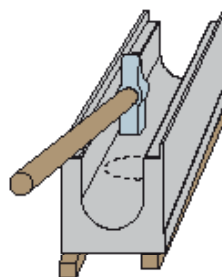


## Precast Vertical Outlet to connect a Pipe in every Trench Drain

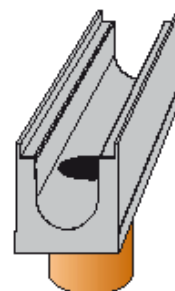
All MINI, TOP and MAXI trench drains have a precast outlet for a pipe connection in the base of every channel. The precast can be knocked out carefully using a hammer, after placing the channel on wooden supports leaving a space underneath. Matching PVC pipe connections are available and allow for an easy connection of the channel to the pipe systems.



Precast Outlet in the channel base for 4", 6" and 8" pipe connection:  
MINI/TOP/MAXI 100: 4" and 6"  
MAXI150 / MAXI 200: 6"  
MAXI300: 8"



Knock out gently



Insert the PVC pipe connection so it does not go all the way through the channel

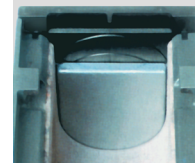


## End Cap Installation Instructions

End Caps are available for all HYDROTEC Trench Drain systems. Depending on the model, the trench drain can be connected to a 4", 6" or 8" pipe. The PVC Connector is only needed to connect a pipe underneath the channel.

### Closed End Cap for MINI100

1. Remove the grate
2. Take Part No. CHG70016-00, place the galvanized steel piece inside the channel so the round male side fits inside the channel.
3. Place back the grate on top of the channel and push it down to lock it.

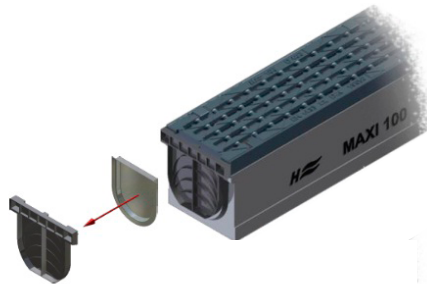


### Closed End Cap for TOP100 / MAXI100

1. Unlock and remove the grate using HYDROTEC's Grate Locking Tool (Part. No. CHG70099-00).
2. Take Part No. CHG70011-10: place the galvanized steel piece inside the channel so the round male side fits inside the channel.
3. Place the plastic piece against the galvanized steel piece so the hooks on top of the plastic piece rest on the edge rails of the channel.
4. Place back the grate on top of the channel and lock it.

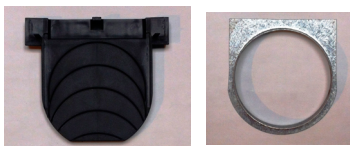


Plastic Piece & Galvanized Steel Piece together form Part No. CHG70011-10



### Connecting a 4" Pipe to an End Cap for MINI100 / TOP100 / MAXI100

1. Unlock and remove the grate using HYDROTEC's Grate Locking Tool (Part. No. CHG70099-00).
2. Take Part No. CHG70011-20: place the galvanized steel piece against the channel so the round male side points outside the channel.
3. Cut the plastic piece following the pre-cut guides so it fits the size of the 4" round male galvanized steel part.
4. Place the plastic piece outside the galvanized steel piece so the hooks on the top of the plastic piece rest on the edge rails of the channel.
5. Insert the 4" pipe into the galvanized steel piece.



Plastic Piece & Galvanized Steel Piece together form Part No. CHG70011-20



### Closing or Connecting a 6" Pipe to an End Cap for MAXI150

1. Unlock and remove the grate using HYDROTEC's Grate Locking Tool (Part. No. CHG70099-00).
2. Take Part. No. CHG70011-51: place the plastic piece outside the galvanized steel piece so the hooks on the top of the plastic piece rest on the edge rails of the channel.
- 3a. To Close the Trench Drain: cut the plastic piece following the pre-cut guides so it fits the height of the channel. Place the grate on top of the channel and lock it.
- 3b. To Connect a 6" pipe to the end of the Trench Drain: Cut the plastic piece following the pre-cut guides so it fits the size of the 6" Pipe.
4. Insert the 6" Pipe into the plastic piece.
5. Place the grate on top of the channel and lock it.



### Closing or Connecting a 8" Pipe to an End Cap for MAXI200

1. Unlock and remove the grate using HYDROTEC's Grate Locking Tool (Part. No. CHG70099-00).
2. Take Part No. CHG70012-00, and place it against the channel so the hooks on the top of the plastic piece rest on the edge rails of the channel.
- 3a. To Close the Trench Drain: Place the grate on top of the channel and lock it.
- 3b. To Connect a 8" pipe to the end of the Trench Drain: Cut the plastic piece following the pre-cut guides so it fits the size of the 8" Pipe.
4. Insert the 8" Pipe into the plastic piece.
5. Place the grate on top of the channel and lock it.



### Closing the MAXI300

1. Unlock and remove the grate using HYDROTEC's Grate Locking Tool (Part. No. CHG70099-00).
2. Take Part No. CHG70031-11, and place it against the channel so the channel is closed.
3. Place the grate on top of the channel and lock it.

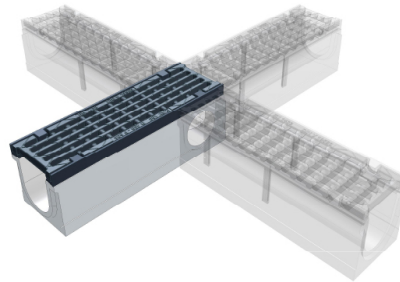


### Connecting a Pipe to a Catch Basin



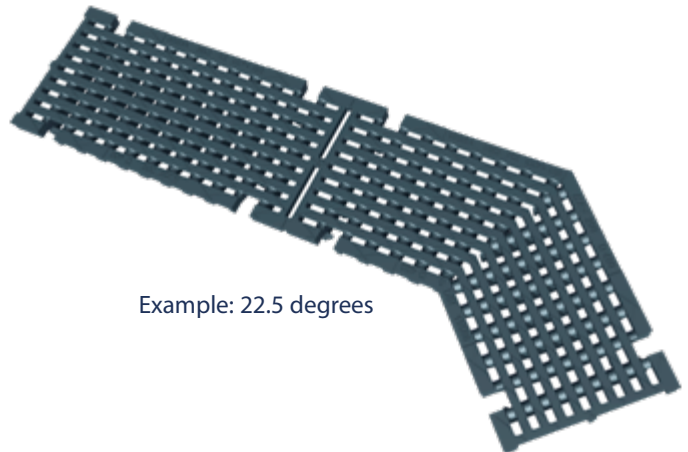
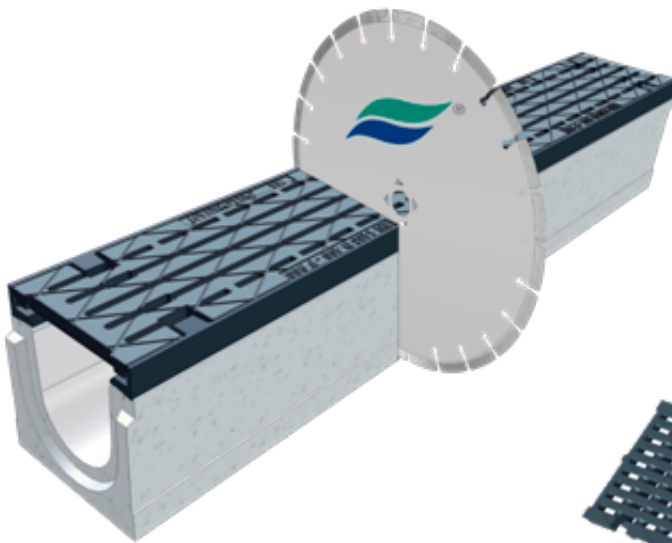
### Installing HYDROTEC Trench Drain in a 90 Degree Angle

The TOP and MAXI lines include a 19.69" (0.5m) parts with a hole on the side. These pieces can be used to create a 90 degree angle or a 4 way cross.



### Installing HYDROTEC Trench Drain in a Different Angle

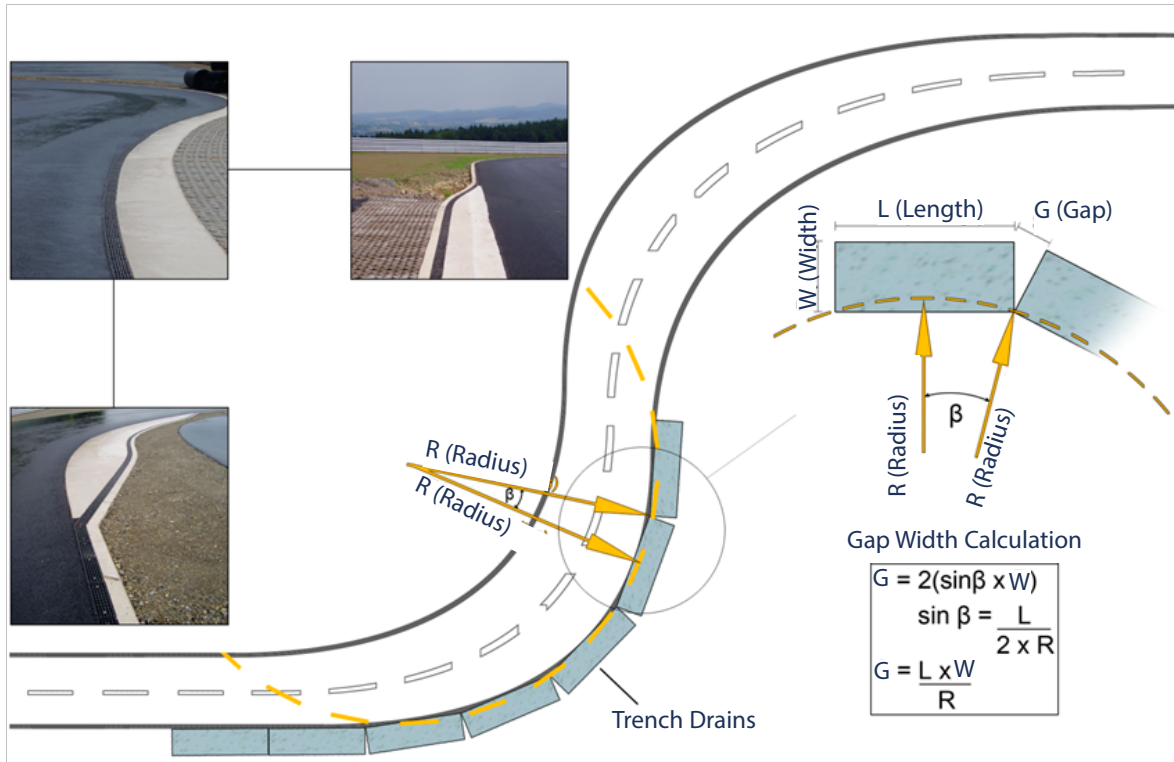
HYDROTEC's fiber reinforced channels and Galvanized Steel and Ductile Iron grates can be cut onsite to create the appropriate angle..



Example: 22.5 degrees

Installing HYDROTEC's Trench Drains in a Radius

HYDROTEC Trench Drains can be installed in a radius by following the following instructions.



Radius R Feet [meters]	Trench Drain Length L Inches								Gap G [mm]
	Throat Width 4" [100]		Throat Width 6" [150]		Throat Width 8" [200]		Throat Width 12" [300]		
	5.51"	4"	8.43"	6"	10.39"	8"	15.28"	12"	
	19.69"[500]	39.37"[1000]	19.69"[500]	39.37"[1000]	19.69"[500]	39.37"[1000]	19.69"[500]	39.37"[1000]	
16.4'[5.0]	0.55"[14.0]	1.10"[28.0]	0.84"[21.4]	1.69"[42.8]	1.04"[26.4]	2.08"[52.8]	1.53"[38.8]	3.06"[77.6]	
24.61'[7.5]	0.37"[9.3]	0.74"[18.7]	0.56"[14.3]	1.12"[28.5]	0.69"[17.6]	1.39"[35.2]	1.02"[25.9]	2.04"[51.7]	
32.81'[10.0]	0.28"[7.0]	0.55"[14.0]	0.42"[10.7]	0.84"[21.4]	0.52"[13.2]	1.04"[26.4]	0.76"[19.4]	1.53"[38.8]	
49.21'[15.0]	0.19"[4.7]	0.37"[9.3]	0.28"[7.1]	0.56"[14.3]	0.35"[8.8]	0.69"[17.6]	0.51"[12.9]	1.02"[25.9]	
65.62'[20.0]	0.14"[3.5]	0.28"[7.0]	0.21"[5.4]	0.42"[10.7]	0.26"[6.6]	0.52"[13.2]	0.38"[9.7]	0.76"[19.4]	
82.02'[25.0]	0.11"[2.8]	0.22"[5.6]	0.17"[4.3]	0.34"[8.6]	0.21"[5.3]	0.42"[10.6]	0.31"[7.8]	0.61"[15.5]	
98.43'[30.0]	0.09"[2.3]	0.19"[4.7]	0.14"[3.6]	0.28"[7.1]	0.17"[4.4]	0.35"[8.8]	0.26"[6.5]	0.51"[12.9]	
114.83'[35.0]	0.08"[2.0]	0.16"[4.0]	0.12"[3.1]	0.24"[6.1]	0.15"[3.8]	0.30"[7.5]	0.22"[5.5]	0.44"[11.1]	

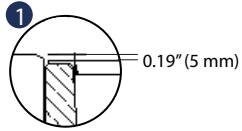
Gap too large     
  Max. Gap Recommended     
  Optimal Gap



### MINI – Load Class A - B with Plaster

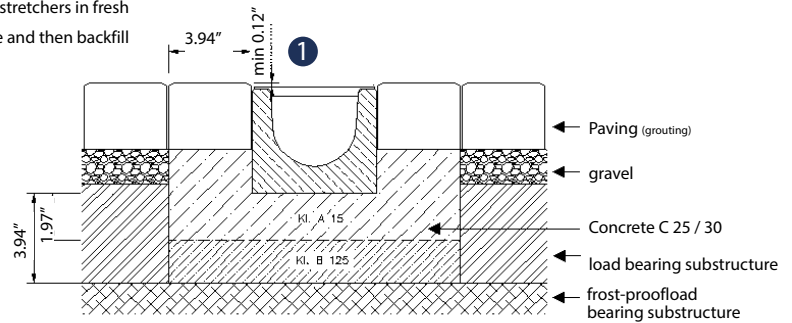


#### Surface compacting: Plaster



The edge protector in the drainage channel must be permanently seated approx. 5 mm lower than the adjoining surface.

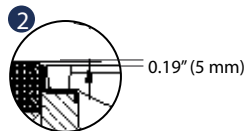
Lay the stretchers in fresh concrete and then backfill



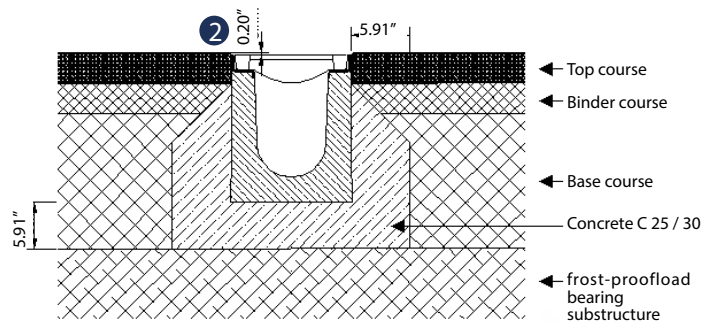
### TOP / MAXI – Load Class A - B - C with Asphalt / Kerb / Concrete / Paving



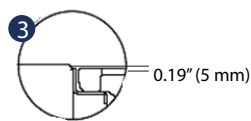
#### Surface compacting: Asphalt



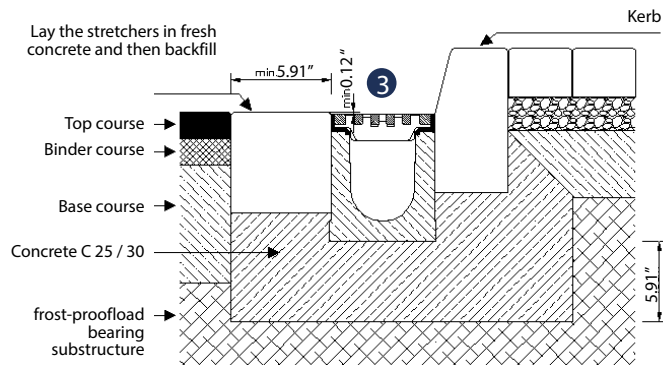
The edge protector in the drainage channel must be permanently seated approx. 5 mm lower than the adjoining surface.



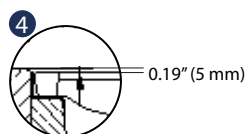
#### Surface compacting: Asphalt / Kerb



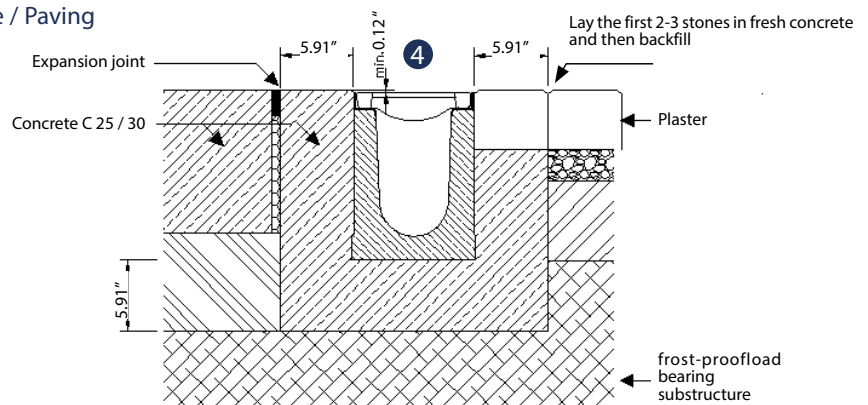
The edge protector in the drainage channel must be permanently seated approx. 5 mm lower than the adjoining surface.



#### Surface compacting: Roadway Concrete / Paving



The edge protector in the drainage channel must be permanently seated approx. 5 mm lower than the adjoining surface.



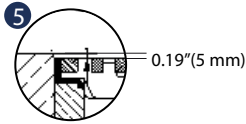
## INSTALLATION INSTRUCTIONS

### MAXI 100 / 150 / 200 / 300 HYDROblock 100 / 200

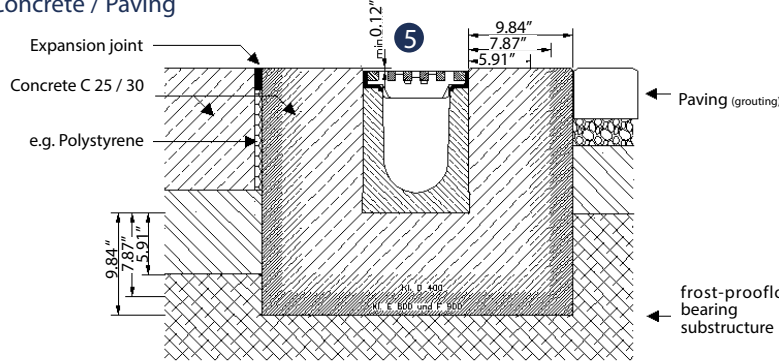
#### MAXI – Load Class D - E - F with Concrete / Paving



#### Surface compacting: Roadway Concrete / Paving



The edge protector in the drainage channel must be permanently approx. 5 mm lower than the neighboring surface.



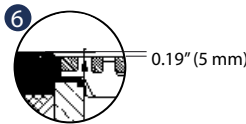
- Concrete strength of encasement at least C 25 / 30.
- The expansion joint width must be executed to reflect the local conditions.
- In case of installation locations with extreme loads, reinforcement of the encasement is recommended

frost-proofload bearing substructure

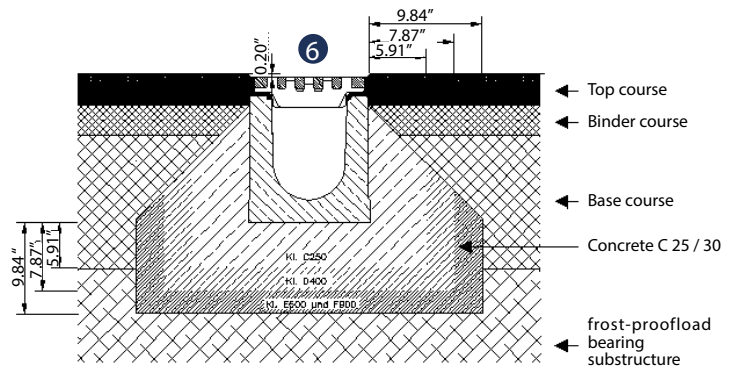
#### MAXI – Load Class C - D - E - F with Asphalt



#### Surface compacting: Asphalt



The edge protector in the drainage channel must be permanently approx. 5 mm lower than the neighboring surface.



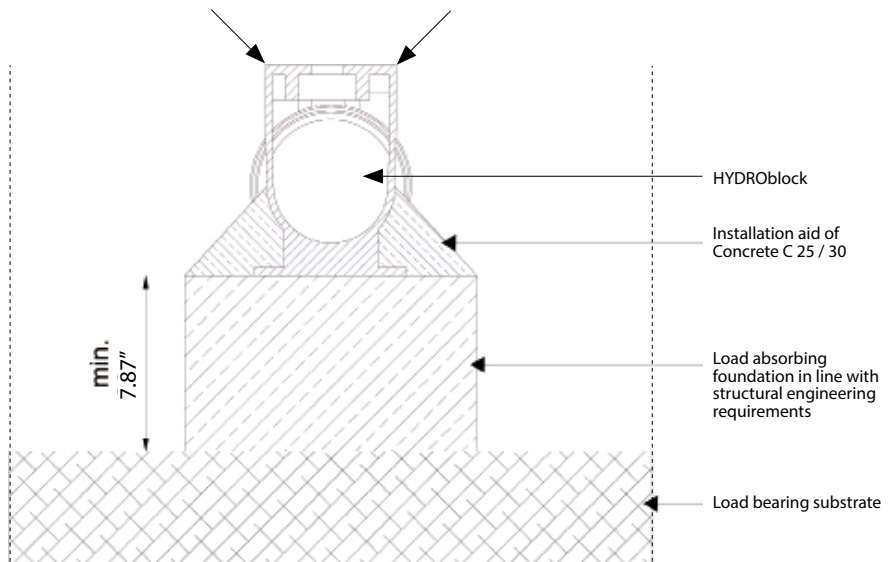
frost-proofload bearing substructure

#### HYDROblock - Load Class F



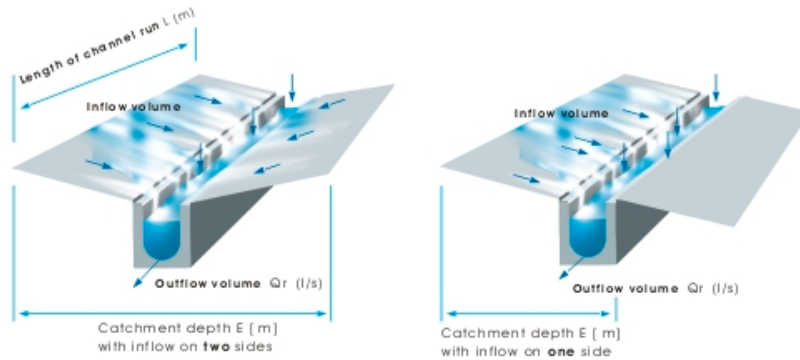
If necessary: circumferential jointing tape to seal the neighboring surface

The surface of the HYDROblock channel must be permanently seated approx. 0.08 ins lower than the adjoining surface.

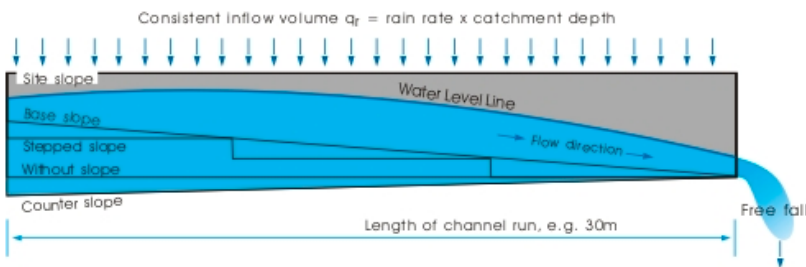


## Hydraulic Calculation

### Catchment depth

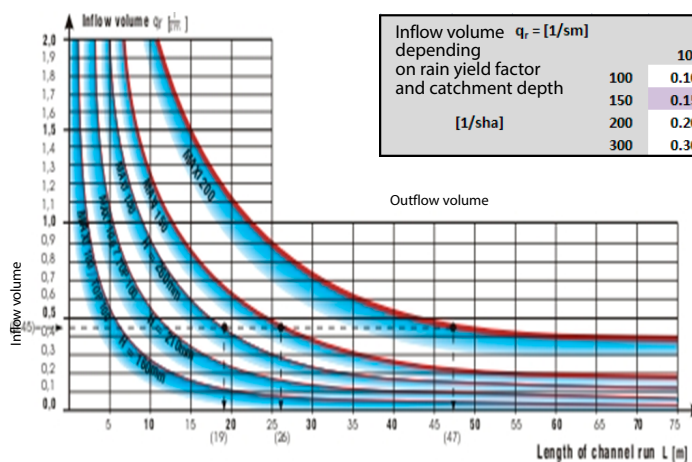


### Outflow volume / Water level / Base formation



The shape of the channel base with or without slope has no effect on the outflow volume of the channel run. The water level remains constant. The outflow volume is determined only by the inner channel diameter at the end of the run, the slope has no impact at all. Result: less effort without slope.

### Calculating the maximum channel run



Inflow volume $q_r = [l/m]$ depending on rain yield factor and catchment depth [l/sha]	Catchment depth E[m]					
	10	15	20	30	40	50
100	0.10	0.15	0.20	0.30	0.40	0.50
150	0.15	0.23	0.30	0.45	0.60	0.75
200	0.20	0.30	0.40	0.60	0.80	1.00
300	0.30	0.45	0.60	0.90	1.20	1.50

Example:

The aim is to determine the maximum length L of a channel run.

The catchment depth E is 30m. The rain yield factor is given as 150.

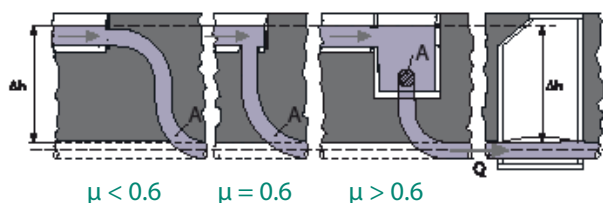
Solution in line with Table 1:

The inflow volume is  $q_r = 0.45$

A length of  $L = 19\text{m}$  can be read off in the diagram for the MAXI 100.

If the length of the MAXI 100 channel exceeds 19m, it will be unable to drain off the intake of water. In this case you should select a greater effective height or nominal width. The length is  $L = 26\text{m}$  for MAXI 150 and  $L = 47\text{m}$  for MAXI 200.

### Outflow volume "Q" of ground pipe



Sewer DN	A [d m <sup>2</sup> ]	Outflow volume Q [l/s]			$\Delta h$ [m] $\mu$
		0.35	1	2	
110	0.85	13.4	22.6	32	
160	1.82	28.6	48.4	68.5	
200	2.87	45.1	76.3	108	

$$Q = \mu \cdot A \cdot \sqrt{2g \cdot \Delta h}$$

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